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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

UNITED STATES OF AMERICA,)	
)	
Plaintiff)	
)	
-VS-)	Criminal No. 21-10104-PBS
)	Pages 1 - 146
VLADISLAV KLYUSHIN,)	
)	
Defendant)	

EVIDENTIARY HEARING

BEFORE THE HONORABLE PATTI B. SARIS
UNITED STATES DISTRICT JUDGE

United States District Court
1 Courthouse Way, Courtroom 19
Boston, Massachusetts 02210
January 18, 2023, 9:26 a.m.

LEE A. MARZILLI
OFFICIAL COURT REPORTER
United States District Court
1 Courthouse Way, Room 7200
Boston, MA 02210
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1 A P P E A R A N C E S:

2 SETH B. KOSTO, ESQ. and STEPHEN E. FRANK, ESQ.,
3 Assistant United States Attorneys, Office of the United States
4 Attorney, 1 Courthouse Way, Room 9200, Boston, Massachusetts,
5 02210, for the Plaintiff.

6 MAKSIM NEMTSEV, ESQ., 20 Park Plaza, Suite 1000,
7 Boston, Massachusetts, 02116, for the Defendant.

8 MARC FERNICH, ESQ., Law Office of Marc Fernich,
9 800 Third Avenue, Suite Floor 20, New York, New York, 10022,
10 for the Defendant.

11 ALSO PRESENT: Larisa Dorfman and Alexander Tetradze,
12 Russian Interpreters
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1		<u>I N D E X</u>			
2	<u>WITNESS</u>	<u>DIRECT</u>	<u>CROSS</u>	<u>REDIRECT</u>	<u>RECROSS</u>
3	MAX CLARKE				
4	By Mr. Frank:	7			
5	By Mr. Nemtsev:		76		
6	By Mr. Frank:			119	
7					
8	<u>EXHIBITS</u>	<u>RECEIVED IN EVIDENCE</u>			
9	<u>Government</u>				
10	A	32			
11	B	32			
12	C	38			
13	D	39			
14	E&F	45			
15	J&L	74			
16					
17	<u>Defendant</u>				
18	1-5, 7	128			
19					
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P R O C E E D I N G S

THE CLERK: Court calls Criminal Action 21-10104, United States v. Klyushin. Could counsel and the interpreters please identify themselves.

MR. FRANK: Stephen Frank and Seth Kosto for the United States. Good morning, your Honor.

THE COURT: Good morning.

MR. NEMTSEV: Good morning, your Honor. Max Nemtsev and Marc Fernich on behalf of Mr. Klyushin.

09:26 MR. FERNICH: Good morning, Judge.

INTERPRETER TETRADZE: Alexander Tetradze, Russian interpreter.

INTERPRETER DORMAN: Larisa Dorfman, Russian interpreter.

(Interpreters duly sworn.)

09:27 THE COURT: Thank you. So today we're going to hold a *Daubert* hearing on the statistical methodology proposed by the government. And I have a cold but it's not the big C, but I didn't want to put this off, so I'm going forward with it. So I won't see you at sidebar so you can all stay healthy.

So right now what I'm hoping to do is just put your expert on the stand.

I do understand your expert is very ill with COVID, speaking of which, and I don't know whether you feel like you want to put him on or whether you'll just reserve on that till

1 after the testimony.

2 MR. NEMTSEV: I think we'll see today. Depending on
3 Mr. Clarke's testimony, we'll make a decision.

4 THE COURT: Yes, and don't forget, all I'm determining
5 is, A, is he qualified, B, is it relevant -- it's easiest to do
6 three -- and, three, is it reliable, both in terms of
7 methodology and in terms of the data he's relying on? And I'll
8 add a fourth thing which is to avoid the prosecutor's fallacy,
9 which is how to state this to make sure it's not overstated and
09:27 10 that it's clear to a jury as to whatever it is, what it means.

11 So with that in mind, do you want to swear in the --
12 oh, I have two other things to say. I did get your voir dire
13 questions. I don't know whether we'll have time today to go
14 through them or not, but I for sure will read them and discuss
15 with you what will go forward and what won't go forward. So
16 right now we're still on track for that Monday, and we're
17 pulling in a lot of jurors, so you need to let me know.

18 Do you think -- let me ask you this. I know you don't
19 know, but I know he's got a serious case of COVID, but is he a
09:28 20 definite witness? Is that something I'm going to have to worry
21 about in scheduling? It's still three or four weeks away.

22 MR. NEMTSEV: Could I let your Honor know after
23 today's hearing?

24 THE COURT: I can't hear a word you're saying.

25 MR. NEMTSEV: I said, can I let your Honor know after

1 today's hearing whether he's, you know, an absolute necessity
2 in connection with the *Daubert* issues?

3 THE COURT: I hope that he's not, like, being
4 hospitalized or something, but you need to let me know because
5 I'm pulling in a lot of jurors, and we're having a lot of
6 scheduling challenges with interpreters, so it's critical.

7 MR. NEMTSEV: I will let you know, your Honor. I
8 spoke to him on Sunday, and he told me he was diagnosed with
9 COVID and wasn't feeling well. I spoke to him on Monday, and
09:29 10 he said he was bedridden, and I haven't been able to reach him.

11 THE COURT: He's not in the hospital? He's not on a
12 ventilator?

13 MR. NEMTSEV: I don't know that, your Honor.

14 THE COURT: All right, you'll let me know. It's
15 Obvious I shouldn't have just asked that question; we want to
16 respect his confidentiality. All right, let's go.

17 MR. FRANK: Thank you, your Honor. The government
18 calls Max Clarke.

19 MAX CLARKE
09:29 20 having been first duly sworn, was examined and testified as
21 follows:

22 THE CLERK: Could you state and spell your name for
23 the record.

24 THE WITNESS: Max Clarke, M-a-x C-l-a-r-k-e.

25 THE CLERK: Thank you.

1 MR. FRANK: May I proceed?

2 THE COURT: Yes.

3 MR. FRANK: Thank you, your Honor.

4 DIRECT EXAMINATION BY MR. FRANK:

5 Q. Good morning, Mr. Clarke.

6 A. Good morning.

7 Q. Could you pull that microphone up close so you don't have
8 to lean in every time you speak. We want to avoid neck strain?

9 A. Is this good?

09:30 10 Q. That's great. Could you tell us where you work.

11 A. I work at the Securities and Exchange Commission.

12 Q. How long have you worked at the SEC?

13 A. I've worked there for eight and a half years.

14 Q. What is your title?

15 A. Senior financial economist.

16 Q. How long have you been a senior financial economist?

17 A. Since 2016.

18 Q. And what was your title before that?

19 A. Financial economist, and before that economist.

09:30 20 Q. Okay. Beginning with your promotion from economist to
21 financial economist, what kinds of requirements did you need to
22 satisfy to be promoted from an economist to a financial
23 economist?

24 A. I need to have expert-level knowledge in the theory,
25 principles, and practices of financial and economic theory, as

1 well as the skill to interpret complex financial and economic
2 data.

3 Q. And what do those requirements involve knowledge of?

4 A. Working with data, finance, and statistics.

5 Q. And then ultimately you were promoted from financial
6 economist to senior financial economist?

7 A. That's correct.

8 Q. Okay. And that's based on seniority?

9 A. Yes. It's three years, and you become senior financial.

09:31 10 Q. Do you work within a particular division of the SEC?

11 A. Yes.

12 Q. What division is that?

13 A. The Division of Economic and Risk Analysis.

14 Q. Is that sometimes referred to as DERA for short?

15 A. Yes.

16 Q. What is the Division of Economic and Risk Analysis?

17 A. It's the part of the SEC where most of the economists sit.
18 It deals with economic and statistical questions, quantitative
19 questions that the SEC faces.

09:31 20 Q. And roughly, if you know, how many economists are there at
21 the SEC?

22 A. Over a hundred.

23 Q. And within DERA, do you sit within a particular unit?

24 A. Yes.

25 Q. What is that?

1 A. I work in the Office of Litigation Economics.

2 Q. What is the Office of Litigation Economics?

3 A. The Office of Litigation Economics is the part of DERA
4 which deals most directly with enforcement cases.

5 THE COURT: Of what?

6 THE WITNESS: Enforcement cases.

7 Q. As opposed to what?

8 A. As opposed to dealing with policy or proactive searching
9 for crime.

09:32 10 Q. To whom does DERA report at the SEC? Does it report to
11 the Enforcement Division?

12 A. No.

13 Q. To whom does it report?

14 A. My numbers go directly to commissioners.

15 Q. To the commissioners of the SEC?

16 A. That's right.

17 Q. Do you have an understanding of why your division reports
18 directly to the commissioners and not to the Office of
19 Enforcement if you're working on enforcement matters?

09:32 20 A. I believe it's to provide more objective results.

21 Q. What do you mean by that?

22 A. I'm able to tell Enforcement that the data does not align
23 with their legal theories.

24 Q. And does that happen from time to time that you tell them
25 that?

1 A. Yes.

2 Q. Let's talk a little bit about your educational background.
3 Tell us about that.

4 A. I graduated with a BA in economics with a minor in math
5 from the College of William and Mary with honors.

6 THE COURT: So BA in economics and --

7 THE WITNESS: A minor in mathematics.

8 Q. With honors, correct?

9 A. That's correct.

09:33 10 Q. And as part of your studies of economics and mathematics,
11 did that involve the study of statistics?

12 A. Yes.

13 Q. And was that in fact a requirement of your degree?

14 A. It was required. I also took more classes because it's my
15 personal interest.

16 THE COURT: So how many statistics classes would you
17 say you took?

18 THE WITNESS: Probably -- I don't know off the top of
19 my head, but probably ten.

09:34 20 THE COURT: As an undergrad?

21 THE WITNESS: That's right.

22 Q. And tell us what subjects you studied within statistics.

23 A. Econ stats, econometrics. I studied probability theory as
24 well as stochastic modeling.

25 Q. Okay let's break each of those down. What is econ

1 statistics, economic statistics?

2 A. It's the study of statistics as it relates to economic
3 data.

4 Q. What is econometrics?

5 A. Econometrics is the study of statistics, particularly
6 regressions as it relates to large data sets that are, you
7 know, economic and financial data, or actually -- yeah,
8 economic data.

9 Q. What is stochastic modeling?

09:34 10 A. It's the study of random processes.

11 Q. What is probability theory?

12 A. Those other ones are more applied. Probability theory has
13 to do with understanding the underlying distribution --
14 underlying theory of statistics.

15 Q. And so as part of that study, did you study statistical
16 methods, different statistical tests and the reasons that they
17 work?

18 A. Yes.

19 Q. Do you hold any certifications?

09:35 20 A. Yes.

21 Q. What certifications do you hold?

22 A. I'm a CFA charter holder.

23 Q. What is a CFA charter holder?

24 A. It's a chartered financial analyst. It reflects the fact
25 that I passed three exams. The exams have a body of knowledge

1 that test your skill in financial analysis, quantitative
2 methods, among other things.

3 Q. And did that also involve testing your knowledge of
4 statistics and statistical methods?

5 A. That's within the quantitative methods section, yes.

6 Q. How many people who begin that process of taking those
7 three exams actually successfully complete all three?

8 A. My understanding, it's one in five.

9 Q. After you graduated with a degree in economics and
09:36 10 mathematics from the College of William and Mary, where did you
11 work?

12 A. I worked at Cornerstone Research.

13 Q. What is Cornerstone Research?

14 A. Cornerstone Research is an economic litigation consulting
15 firm.

16 Q. How long were you at Cornerstone Research?

17 A. Three years.

18 Q. What kinds of clients did you have when you were
19 consulting at Cornerstone?

09:36 20 A. Major banks, retirement plans, things like that.

21 THE COURT: Can I back up a little. Did you get a
22 master's at William and Mary, or is it an undergraduate degree.

23 A. Just an undergraduate degree.

24 THE COURT: And so did you have to write a thesis?

25 THE WITNESS: I did not have to write a thesis, but my

1 professional --

2 THE COURT: Have you written papers?

3 THE WITNESS: I have not written any papers.

4 Q. What were you going to say, Mr. Clarke?

5 A. I was going to say that while I have respect for people
6 with master's degrees, I do statistics every day. It's my job.
7 It's been my job for ten years. I'm a practitioner.

8 Q. What did your work involve at Cornerstone?

9 A. It involved summarizing large data sets and drawing
09:37 10 conclusions from those data sets using statistics and other
11 data techniques.

12 Q. And what kinds of statistical methods did you use as a
13 regular part of your work at Cornerstone?

14 A. We used the tests that applied to the particular
15 situations, but we used progressions, Fisher Exact Test, among
16 others.

17 Q. You joined the SEC in --

18 THE COURT: So you yourself used the Fisher Test
19 that's at issue here in this case?

09:37 20 THE WITNESS: At Cornerstone, yes.

21 THE COURT: How many times did you use it?

22 THE WITNESS: I don't remember off the top of my head,
23 but you only use a Fisher Exact Test under a particular
24 circumstance. The particular circumstance is that you're
25 comparing categorical variables.

1 MR. FRANK: And we'll talk about that in a second.

2 THE COURT: Okay, I'll let you go at your pace.

3 Q. Have you also -- well, what kinds of matters have you
4 worked on since joining the SEC in 2014?

5 A. Sure. I work on insider trading cases, including hacked
6 trading. I work on investment advisor abuses, as well as
7 market manipulation and financial misreporting.

8 Q. To what extent has your work since 2014, so the last
9 roughly nine years at the SEC, to what extent has that work
09:38 10 involved the regular use of statistical methods?

11 A. I use statistics in nearly every case.

12 Q. What kinds of statistical methods do you regularly use at
13 the SEC?

14 A. Again, it depends on the data at hand, but I regularly use
15 regression analysis as well as Fisher Exact Test.

16 Q. And are there other tests that you also use?

17 A. Sure.

18 Q. Have you won any awards for your work at the SEC?

19 A. Yes.

09:39 20 THE COURT: Can I back up. In a ballpark, how many
21 times would you say since you've been at the SEC, or I guess
22 since you've been at Cornerstone, have you used the Fisher
23 Exact Test?

24 THE WITNESS: I've used the Fisher Exact Test on the
25 other hacking cases, and I've also used --

1 THE COURT: On the other hacking cases?

2 THE WITNESS: Yes, that I've worked on, as well as
3 cases that involve investment advisor abuses, so
4 cherry-picking, for example, which is when a -- would you like
5 more explanation than that?

6 THE COURT: So the ballpark, have you used it a dozen
7 times? Have you used it a hundred times? How many times have
8 you used it?

9 THE WITNESS: Probably less than a dozen, but it's
09:39 10 because a particular situation has to occur for it to happen,
11 for it to be the correct test to use.

12 MR. FRANK: May I proceed, your Honor?

13 THE COURT: Sure. Thank you.

14 Q. Tell us about the awards you've won at the SEC.

15 A. Sure. In 2016 I won the SEC Analytic Methods Award.

16 Q. And what was the Analytic Methods Award for?

17 A. That was for my work on the newswire hacking case.

18 Q. In a sentence or two, tell us what the newswire hacking
19 case involved.

09:40 20 A. The allegations were that hackers got access to press
21 releases through hacking newswires like Business Wire and PR
22 Newswire before they were released to the public, and traders
23 were trading on this inside information prior to the public
24 dissemination of news.

25 Q. So in contrast to this case where the allegation is that

1 there were SEC filings that were accessed before they were
2 released to the public, in that case it was press releases that
3 were allegedly accessed before they were released to the
4 public?

5 A. Yes.

6 Q. And that was from the PR Newswire and Business Wire
7 databases?

8 A. Yes.

9 Q. And those press releases concerned what?

09:40 10 A. Earnings.

11 Q. And what analytical methods did you employ in your work in
12 that case?

13 A. We used Fisher Exact Test and permutation test.

14 Q. And you won an award for that from the SEC?

15 A. That's correct.

16 Q. And in that case, was that a civil case, a criminal case,
17 or both?

18 A. Both.

19 Q. How was your analysis used in that case?

09:41 20 A. I supported an expert who presented these to a jury.

21 Q. So you didn't personally testify before the jury?

22 A. That's correct.

23 Q. But your analysis was provided through the expert
24 testimony to the jury?

25 A. Yes.

1 Q. What other awards have you won since being at the SEC?

2 A. Forgive me if I forget the dates, but I think in 2019 I
3 won the DERA Director Award, and in 2021 I won the Matthews
4 Award.

5 Q. Okay, let's take each of those in turn. What did you win
6 the DERA Director's Award for?

7 A. Sure. So one part of my job that's not related to
8 enforcement has to do with calculating the fee rate that the
9 SEC charges to all stock transactions.

09:42 10 Q. Why does the SEC charge a fee to all stock transactions?

11 A. The SEC is a self-funded agency, so there's an
12 appropriation from Congress that's for, you know, about
13 \$2 billion. The SEC raises that money through a transaction
14 fee that's charged to every single stock trade that's made, and
15 they take -- you have to predict how much stocks will trade,
16 and then you divide that by the \$2 billion appropriations to
17 arrive at a fee rate. I think last year was \$22. But I use
18 statistics, statistical method and statistics to come up with
19 that number.

09:42 20 Q. And how many economists did you say there were at the SEC?

21 A. Over a hundred.

22 Q. How many economists were selected to calculate the fee
23 rate?

24 A. Two.

25 Q. And then you won an award for that?

1 A. That's right.

2 Q. Tell us about the third award that you mentioned, the
3 Matthews Award?

4 A. That was related to the EDGAR hack.

5 Q. What was the EDGAR hacking case about?

6 A. The EDGAR hacking case had to do with an allegation that
7 there was unauthorized access onto the EDGAR, which is the
8 SEC's own system for disseminating news. There's something
9 called "test filings" that the hackers had access to prior to
09:43 10 the public dissemination of the news.

11 Q. What kind of filings were alleged to have been hacked from
12 the SEC's EDGAR database in that case?

13 A. Earnings, earnings.

14 Q. And what did your work in that case involve?

15 A. I summarized data and drew conclusions using statistics.
16 The statistics I used were the Fisher Exact Test. Yeah, I
17 didn't use the permutation test in that one.

18 THE COURT: I lost you there.

19 THE WITNESS: Sorry.

09:43 20 THE COURT: So you used the Fisher Exact Test, and
21 then what did you say?

22 THE WITNESS: I used two tests in this case. I used
23 the Fisher Exact Test and the permutation test. I'm saying, in
24 the EDGAR hack, I used the Fisher Exact Test but not the
25 permutation test.

1 Q. Now, in those cases that we've talked about, did you
2 testify?

3 A. No.

4 Q. Have you ever testified in a court proceeding?

5 A. Yes.

6 Q. How often?

7 A. I testified one time.

8 Q. And what case was that?

9 A. I believe it was called *SEC v. Sargent*.

09:44 10 Q. And was that in this courthouse?

11 A. Yes, it was.

12 Q. Who was the presiding judge in that case?

13 A. I think his name was Young.

14 Q. Judge Young?

15 A. Yes.

16 Q. And did you testify in that case as a fact witness or as
17 an expert witness?

18 A. I believe as a fact witness.

19 Q. And what was the subject of your testimony in that case?

09:44 20 A. It had to do with a -- there's a Supreme Court case called
21 *Liu* that has to do with giving money back to people who were
22 harmed. The question was, was it feasible to calculate who was
23 harmed in this case, and I testified that, yes, it was
24 feasible.

25 Q. And do you know what the Court found?

1 A. They found that it was feasible.

2 Q. And that was a bench trial or a jury trial?

3 A. Bench trial or -- yes.

4 THE COURT: What was it, a restitution issue? Was it
5 a criminal --

6 THE WITNESS: It was criminal -- or I don't know.

7 MR. FRANK: It was an SEC case, your Honor. It was a
8 civil case.

9 THE COURT: Civil, okay.

09:45 10 Q. And did that involve the use of statistics?

11 A. Did the ultimate conclusion?

12 Q. Yes, involve the use of statistics in that case?

13 A. No.

14 Q. Have you submitted a written expert report in connection
15 with any other cases?

16 A. Yes.

17 Q. Were those civil -- well, which case was that?

18 A. *U.S. v. Soady*. That was in the Northern District of
19 Alabama.

09:46 20 Q. That was a criminal case?

21 A. Yes.

22 Q. And in that case, did your work involve the use of
23 statistics?

24 A. Yes.

25 Q. What was your work in that case?

1 A. It was for a sentencing hearing. They wanted me to
2 calculate damages on a pump-and-dump scheme.

3 Q. And what statistical methods did you use in that case, if
4 you recall?

5 A. I used regressions.

6 Q. And how was your work used in that case?

7 A. I believe it was accepted by both sides, and they accepted
8 my numbers to use in sentencing.

9 Q. And that was submitted as expert testimony or an expert
09:46 10 report?

11 A. Yeah, I wrote an expert report, yes.

12 Q. As a general matter, Mr. Clarke, in your work at the SEC,
13 do you use a variety of statistical methods?

14 A. I use the statistical tests that are relevant to the
15 dataset at hand. It depends on the facts and circumstances of
16 the case.

17 Q. What do you mean when you say that?

18 A. I mean that different data -- the way that the data is
19 constructed can lead to the use of different statistical
09:47 20 tests --

21 Q. And so --

22 A. -- to being the best test.

23 Q. And so how do you decide which is the best test in a given
24 circumstance?

25 A. Uhm, I use my knowledge of statistics. I consult with

1 other experts at the SEC, and then I make a decision.

2 Q. And so in your work at the SEC, you use tests like the
3 Fisher Exact Test?

4 A. That's correct.

5 Q. You use regression analysis?

6 A. I do.

7 Q. What are some of the other tests you've used?

8 A. I've used T-tests. I've used ANOVA tests. I've used
9 different types of regressions, like logistical regression.

09:47 10 Q. Let me ask you now specifically about the Fisher Exact
11 Test. You mentioned a moment ago in answer to Judge Saris'
12 question that it involves categorical variables.

13 A. Yes.

14 Q. What are you testing in the Fisher Exact Test?

15 A. You're testing the independence of two categorical
16 variables.

17 Q. And what are categorical variables?

18 A. They're variables that you can group into categories, so
19 is it red or is it blue?

09:48 20 Q. As distinguished from what?

21 A. As distinguished from a continuous variable, something
22 that, like, you know, stock prices over time move a lot.

23 Q. So time, would time be a categorical variable or a
24 continuous variable?

25 A. A continuous variable.

1 Q. Would the question whether somebody traded or not be a
2 categorical variable or a continuous variable?

3 A. Sorry. Could you repeat the question.

4 Q. Whether or not somebody traded, would that be a
5 categorical variable or a continuous variable?

6 A. That would be a categorical variable.

7 Q. So, again, in what circumstances do you use the Fisher
8 Exact Test?

9 A. When you're comparing two categorical variables.

09:49 10 Q. It's been suggested in some of the defense filings in this
11 case that the Fisher Exact Test is poorly suited for situations
12 where the data comes from historical events rather than a
13 controlled experiment. Do you agree with that statement?

14 A. No.

15 Q. Why?

16 A. The study of finance almost always uses historical data.
17 So anytime a Fisher Exact Test is used in the context of
18 finance, it's on historical data.

19 Q. And is the Fisher Exact Test, in your experience, used in
09:49 20 finance?

21 A. Yes.

22 Q. Have you used it?

23 A. Yes.

24 Q. Are you aware of other experts using it?

25 A. Yes.

1 Q. It's also been suggested by the defense that the Fisher
2 Exact Test involves simplistic assumptions that lend themselves
3 to extreme results because the test is comparing two categorical
4 variables and not accounting for other factors. Do you agree
5 with that statement?

6 A. No.

7 Q. Why not?

8 A. I think that the Fisher Exact Test does what it says it
9 does: It's comparing two categorical variables. So it's
09:50 10 answering a question, which is, are these two variables
11 correlated or not? If you want to do something different,
12 you'll be answering a different question.

13 Q. It's been suggested that the test --

14 THE COURT: Can I back up. Tell me about this test.
15 How long has it been a test that's been used by statisticians?

16 THE WITNESS: The Fisher Exact Test?

17 THE COURT: Yes.

18 THE WITNESS: It is a -- like, Fisher was one of the,
19 you know, like, original statisticians when the field was
09:50 20 coming up, so it's been around for a really long time.

21 THE COURT: And is it something you studied in school?

22 THE WITNESS: Yes.

23 THE COURT: And is your work reviewed at the SEC to
24 make sure you're using the right test?

25 THE WITNESS: Yes.

1 Q. And in fact, Mr. Clarke, in this case, was your work
2 reviewed before it was submitted?

3 A. Yes.

4 Q. So it's checked by other financial economists?

5 A. That's correct.

6 Q. And you've also checked the work of other financial
7 economists at the SEC, correct?

8 A. That's right. It's standard practice.

9 Q. The suggestion has been made that the Fisher Exact Test
09:51 10 involves simplistic assumptions that lend themselves to extreme
11 results when there's a large dataset. Do you agree with that?

12 A. No.

13 Q. Why not?

14 A. In statistics, it's usually better to have -- you can make
15 better conclusions when you have more data.

16 Q. So let me ask you about how you used the test in this
17 particular case. What questions were you seeking to answer
18 when you employed the Fisher Exact Test here?

19 A. Is there a relationship between the traders' trading and
09:52 20 whether or not it was a DFIN or Toppan earnings event?

21 THE COURT: Say that again. Whether there's a
22 correlation between what?

23 THE WITNESS: If the traders traded it, and if it was
24 a DFIN or Toppan earnings event or not.

25 Q. So on the one hand, the categorical variable was, did the

1 traders trade in an earnings event?

2 A. That's right.

3 Q. And on the other hand, the categorical variable was, was
4 that earnings event handled by DFIN or Toppan Merrill as the
5 filing agent?

6 THE COURT: You know, I don't know the words you're
7 using.

8 MR. FRANK: Let me define the companies.

9 Q. I'm using the terms DFIN and Toppan Merrill. DFIN is an
09:52 10 abbreviation for a company called Donnelly Financial?

11 A. That's right.

12 Q. Toppan Merrill is another company?

13 A. That's right. I think those are the at-issue filing
14 agents in this case.

15 Q. And so those are the --

16 THE COURT: So those are Financial Analysts 1 and 2?

17 THE WITNESS: Yes.

18 THE COURT: We haven't been using those terms, so
19 excuse me for my --

09:53 20 MR. FRANK: I apologize, your Honor. That's my fault.

21 And so Toppan Merrill, just for reference, is Filing Agent 1,
22 and Donnelly Financial, which is abbreviated DFIN, is Filing
23 Agent 2. And Toppan Merrill is often abbreviated TM.

24 Q. Okay, so just to step back, the first question you asked
25 was, did the defendant trade around a particular earnings

1 event, categorical variable, versus was that earnings release
2 filed with the SEC's EDGAR database by Donnelly Financial or
3 Toppan Merrill?

4 A. That's correct.

5 THE COURT: All right, so let me ask you this: These
6 two firms, how many of these -- what are they, financial --
7 what do you call them?

8 THE WITNESS: Filing agents.

9 THE COURT: Filing agents, how many of them are there?

09:54 10 THE WITNESS: There are a bunch, but there are three
11 big ones.

12 THE COURT: Three big ones?

13 THE WITNESS: Yes.

14 THE COURT: Who's the third one?

15 THE WITNESS: Workiva, W-o-r-k-i-v-a, Workiva.

16 THE COURT: And are there specialties? In other
17 words, does Workiva, if I'm pronouncing it correctly,
18 specialize in a special kind of security?

19 THE WITNESS: No. They all span kind of all
09:54 20 securities.

21 THE COURT: So it's not that one does more S&P 500
22 than another?

23 THE WITNESS: I don't think that's the case.

24 MR. FRANK: We're going to talk about that in detail,
25 your Honor.

1 THE COURT: Okay, but I'm just trying to understand.
2 So when you're doing this analysis, can you explain it by the
3 fact that some financial agents do one kind of stock versus
4 another kind of stock?

5 THE WITNESS: No.

6 THE COURT: Why?

7 THE WITNESS: So if you look at the filings and you
8 split it up by SEC code, which is the sector, you can see that
9 the market share is pretty similar for across all sectors of
09:55 10 Donnelly Financial and Toppan Merrill. So the 44 percent, it
11 might be like 48 percent or something for the agricultural
12 sector or something, and then it's 41 percent for the
13 manufacturing sector. Does that make sense?

14 MR. FRANK: I think it will make more sense when we
15 get to --

16 THE COURT: All right, I'll let you keep going because
17 you're probably anticipating my questions. Go ahead.

18 MR. FRANK: Thank you, your Honor.

19 Q. So that was one question that you asked, and then what was
09:55 20 the second question that you asked?

21 A. There's something that's in finance that's called an
22 "earnings beat" and an "earnings miss," and that's when the
23 company does much better than what the market expects, and the
24 stock prices, you know, you would expect to go up. And the
25 other way is that there's an earnings miss where the earnings

1 is way worse than people expected. So I looked at earnings
2 beats and earnings misses as one of my categorical variables,
3 and then traded long or short for my other one.

4 Q. Okay, so just to break that down, and we're going to do
5 this in detail, but on the one hand, the categorical variable
6 that you examined was, did the trader trade long; that is to
7 say, did they buy stock?

8 A. Right, did they expect the stock price to go up.

9 Q. By buying stock?

09:56 10 A. By buying stock.

11 Q. Or did they sell the stock short; that is, make a bet that
12 the stock was going to go down?

13 A. Yes.

14 Q. And on the other hand, the categorical variable was, did
15 the company exceed expectations; that is, beat earnings
16 expectations?

17 A. Yes.

18 Q. Or did the company fall short of earnings expectations?

19 A. That's right.

09:56 20 Q. So those were the two categorical variables for that test?

21 A. That's right.

22 Q. Okay. And why did you use the Fisher Exact Test in those
23 two instances?

24 A. Because I was comparing two categorical variables.

25 Q. Okay, so now I want to try to answer the Judge's questions

1 about the first test that you did, which is to say, did the
2 traders trade around an earnings event, and was that earnings
3 filing filed by one of these two filing agents?

4 A. Yes.

5 Q. So, first of all, let's talk about what data you used. If
6 we could call up Exhibit A, and if you could tell the Court,
7 what is Exhibit A? Do you see it on your screen?

8 A. I don't see anything on my screen.

9 THE COURT: Is your screen not working?

09:57 10 THE CLERK: You might have to flip the other screen
11 over. This always happens to the screen. It was working this
12 morning. You can tap it.

13 THE WITNESS: It looks good.

14 MR. KOSTO: Your Honor, if I could approach the
15 witness, I could give him a paper copy to work with that
16 matches what's on the Court's screen.

17 THE COURT: Yes.

18 MR. KOSTO: So may I?

19 THE COURT: Yes.

09:58 20 Q. Are you looking at Exhibit A, "Trading Blotters: Accounts
21 and Traders"?

22 A. Yes.

23 Q. Did you prepare that document?

24 A. I did.

25 Q. What is it?

1 A. This shows the trading blotters that I analyzed in this
2 case. It shows that there are 22 accounts across six brokers
3 and eight traders.

4 Q. Okay. So what's a trading blotter?

5 A. A trading blotter is when you request data from a company
6 and you want to see their trades. It has all the buys and
7 sells, prices and quantities that the traders traded; and the
8 ticker symbol is some identifier of what they traded in.

9 Q. So it's a record of their trading for those accounts?

09:59 10 A. That's right.

11 Q. Okay. And how many different traders are identified here?

12 A. Eight.

13 Q. Okay. And how many different brokerage firms were
14 involved?

15 A. Six.

16 Q. And how many different accounts at those brokerage firms
17 did you examine?

18 A. Twenty-two.

19 Q. And what period of time did your analysis focus on?

09:59 20 A. January 1, 2018, through September 30, 2020.

21 Q. And why that time period?

22 A. I was asked to look at that time period.

23 Q. And you're aware that that's the time period of the
24 alleged conspiracy in this case?

25 A. Yes.

1 Q. Okay. And why these traders and these accounts?

2 A. These were the traders and accounts I was given.

3 Q. So this was the trading dataset that you started with?

4 A. That's right.

5 Q. When you looked at this set of trading data, were you able
6 to determine whether these eight traders, the defendant and the
7 other traders, traded exclusively around earnings announcements,
8 or did they trade at other times as well?

9 A. They traded at other times as well.

10:00 10 Q. Could we look at Exhibit --

11 MR. FRANK: And I don't know if your Honor would like
12 me to offer these exhibits formally or not, and so I offer
13 Exhibit A.

14 THE COURT: All right, I allow that.

15 (Exhibit A received in evidence.)

16 Q. Could we take a look now at Exhibit B. Did you prepare
17 Exhibit B, Mr. Clarke?

18 A. I did.

19 Q. What is Exhibit B?

10:00 20 A. It shows the summaries of the profits that they made for
21 all their trading for all accounts and the different way they
22 split it up.

23 MR. FRANK: So the government offers Exhibit B.

24 (Exhibit B received in evidence.)

25 Q. So for purposes of preparing the summary in Exhibit B, did

1 you look at all of those accounts that we looked at in
2 Exhibit A?

3 A. Yes.

4 Q. Okay. And just at a high level, tell us, what did you
5 determine that is set forth in Exhibit B?

6 A. Sure. So, first, I split the data between long term and
7 short term. So I define short term as three days or less,
8 trading that opens and closes within three days, and that's a
9 common heuristic. And then I looked at trading that was around
10:01 10 earnings events. That means a trade that was opened before an
11 earnings was released and closed after that it was released.

12 Q. Okay, so let's break that down. So you distinguished
13 between long-term trading events and short-term trading events?

14 A. That's right.

15 Q. And you defined short-term trading events as where the
16 trade was open -- that is, the stock was bought or sold on day
17 one -- and then unwound -- that is, sold or bought -- within
18 three days?

19 A. Yeah, that's right.

10:02 20 Q. And long-term events were longer than that?

21 A. That's right.

22 Q. And why did you define short-term events that way?

23 A. When I looked at the data, most of the trading occurring
24 in short-term trades, three days or less.

25 Q. And then you said you distinguished between non-earnings

1 trading and earnings trading?

2 A. That's right.

3 Q. Tell us about that distinction.

4 A. So earnings are required to be disclosed by companies, and
5 so there's a particular type of trading strategy that's called
6 "earnings trading." It's a very common strategy that people
7 do. And what that entails is that you expect the market to
8 move on these earnings announcements, so you open before the
9 earnings, and then you close after. I saw in the data that
10:03 10 they do this a lot.

11 Q. Okay. And so how did you define an earnings event, an
12 earnings trade, for purposes of this analysis?

13 A. I said if the trade was open within three days of the
14 earnings announcement and closed after.

15 Q. And how often are companies in the United States required
16 to report earnings?

17 A. Quarterly.

18 Q. So every three months?

19 A. That's right.

10:03 20 Q. And looking at your chart, what did you determine, when
21 you looked at all of the trading by those eight traders during
22 that time period, about the concentrations of their trading?

23 A. Could you repeat the question?

24 Q. Maybe it was a bad question. What did you determine they
25 did most often during that period?

1 THE COURT: Did your screens just go off? Mine has.

2 THE WITNESS: My screen just came on.

3 THE COURT: You took mine. I don't have it. Anyway,
4 I have another one here. Okay.

5 Q. So taking a look at Exhibit B, what did you determine
6 about the frequency of their trading in these different styles?

7 A. Sure. The vast majority of their profits is coming from
8 earnings trades, and the, you know, significant majority of
9 their trading was in earnings trades.

10:04 10 Q. Okay. So it looks like you've identified a total of just
11 under 3,000 total trading episodes; is that right?

12 A. That's right.

13 Q. And what's a trading episode?

14 A. That's one instance of a position being opened and a
15 position being closed.

16 Q. Okay. So that's a roundtrip?

17 A. A roundtrip trade, sure.

18 Q. Okay. And of those 2,900 trading episodes, how many were
19 earnings-related?

10:04 20 A. That would be 1,988 plus 50, so that's --

21 Q. About two-thirds?

22 A. About two-thirds, yes.

23 Q. Okay. And of those earnings episodes, those trading
24 episodes around earnings -- and we'll talk about how you
25 determined this in a minute -- but were you able to determine

1 how many of those earnings filings were handled by Donnelly
2 Financial or Toppan Merrill?

3 A. Yeah. I think it's something like 98 percent.

4 Q. Okay. And that's the 1,988 number that we're looking at?

5 A. That's right.

6 Q. And let's look at profitability. In this period of
7 roughly two years and nine months, how much did the eight
8 traders earn from their earnings trading around events handled
9 by Donnelly Financial or Toppan Merrill?

10:05 10 A. \$97.6 million.

11 Q. Okay. How much did they earn from their earnings trading
12 in companies whose earnings filings were handled by other
13 companies?

14 A. \$544,000.

15 Q. Okay. And what about relative to all their other trading,
16 how much was their earnings trading in Toppan Merrill and
17 Donnelly Financial companies versus all their other trading?

18 A. Significantly larger.

19 Q. Okay. So overall they made over this period \$89 million?

10:06 20 A. That's right.

21 Q. And is it fair to say, they lost money collectively on all
22 their other trades but made \$97 million on the earnings trading
23 around Donnelly and Toppan?

24 A. That's right.

25 Q. And then on the far right, you have "Return per episode."

1 What is that?

2 A. That's per episode, the return on a single trade, the
3 average return, money-weighted average return.

4 Q. So just in one trading episode, it could be a few days; it
5 could be longer than that?

6 A. Yes.

7 Q. So what does this column show?

8 A. The return was the highest on the DFIN/Toppan Merrill
9 earnings trades.

10:07 10 Q. Double what it was on other earnings trades?

11 THE COURT: Where do you show that? I'm sorry.

12 MR. FRANK: On the far right, your Honor.

13 THE COURT: Per episode, and then where does it say
14 that it's making more money?

15 MR. FRANK: So if your Honor looks at the very bottom,
16 you'll see the return per episode for trades related to DFIN
17 and Toppan Merrill clients. That's 4.4 percent.

18 THE COURT: Where are the others? Oh, others 2.2, so
19 it's double? Is that it?

10:07 20 MR. FRANK: Correct.

21 THE COURT: Let me ask you this: What percentage does
22 that third filing agent have?

23 MR. FRANK: We're about to look at that, your Honor.

24 Q. Could we look at Exhibit C. Did you prepare Exhibit C?

25 A. I did.

1 Q. What is Exhibit C?

2 A. Exhibit C is just graphing the previous exhibit's profits.

3 Q. Okay. So this is just showing that they made close to
4 \$100 million trading in the earnings of DFIN and Toppan Merrill
5 clients, and they made, it's fair to say, de minimis amounts or
6 lost money on all their other trading?

7 A. Much smaller amounts, yes.

8 MR. FRANK: The government offers Exhibit C.

9 (Exhibit C received in evidence.)

10:08 10 Q. And now I'd like to take a look at exhibit D. What is
11 Exhibit D?

12 A. Exhibit D shows the amount invested with outside money
13 versus the amount of money they made from this DFIN/Toppan
14 Merrill earnings trades.

15 Q. Okay. So here we're just looking at their trading in DFIN
16 and Toppan Merrill clients, just those earnings trades?

17 A. Yes.

18 Q. Okay. And directing your attention to the second line for
19 Mr. Klyushin, what do you mean by "maximum net deposit"?

10:08 20 A. So I reviewed cash flow files and account statements, and
21 I could see when he deposited money into his account, and this
22 was the maximum amount that he deposited from using outside
23 funds. So sometimes he transferred money between accounts. I
24 didn't want to include that because that would be money from
25 within the strategy. So it was money coming from outside

1 investing into the strategy.

2 Q. So is it fair to say that the total amount of outside
3 money he invested in his account, his brokerage account, during
4 this time period was \$2.1 million?

5 A. Yes.

6 Q. And during that same period, how much did he personally
7 generate from trading around the earnings of clients whose
8 earnings were filed by Donnelly Financial or Toppan Merrill?

9 A. About \$21 million.

10:09 10 Q. And what was his return on that portion of his trading?

11 A. 895 percent.

12 Q. So almost 900 percent?

13 A. That's right.

14 Q. Now, we see different return rates for the different
15 traders. Can you tell us why that is?

16 A. It has to do with how long they're in the strategy, how
17 many trading episodes they traded, and the amount that they
18 invested per trade.

19 Q. So some of these traders started earlier?

10:10 20 A. That's right.

21 Q. And they bet different amounts on the different trades?

22 A. That's right.

23 MR. FRANK: The government offers Exhibit D.

24 (Exhibit D received in evidence.)

25 Q. And now I'd like to move to Exhibit E. Okay, and I think

1 this will now address Judge Saris' question of a moment ago.

2 Did you prepare this chart?

3 A. Yes, I did.

4 Q. What does it show?

5 A. It shows that in the dataset that I looked at, I observed
6 that 96 percent of Klyushin's earnings trades were in DFIN and
7 Toppan Merrill. I thought that needed some context. Well,
8 what does the market share look like? And I found that to be
9 44 percent, so --

10:10 10 Q. Let's talk about how you determined the market share
11 attributable to DFIN and Toppan Merrill. So what did you do to
12 figure out what their share of the market was?

13 A. Sure. I used the accession number of the earnings filing.

14 Q. What is the accession number?

15 A. Sure. At the SEC, every time an earnings file is
16 submitted to the EDGAR system, an accession number is
17 generated. The accession number tells us who filed.

18 Q. Okay. So for every single earnings filing, you can
19 determine who filed it?

10:11 20 A. That's right.

21 Q. By accession number?

22 A. Yes. Well, some of them are self, but, yes.

23 Q. Okay, so we'll talk about that in a minute, but there is
24 an accession number associated with every filing?

25 A. That's right.

1 Q. So during this period, January 1, 2018, to September 30,
2 2020, what did you do with respect to the earnings filings that
3 were filed during that period?

4 A. Can you repeat the question.

5 Q. What did you examine with respect to the earnings filings,
6 all the earnings filings that were filed between January 1,
7 2018, and September 30, 2020?

8 A. I looked at the earnings announcements, and I looked at
9 the filing associated with it, and I looked at the accession
10:12 10 number. If the accession number said that it was DFIN or
11 Toppan Merrill, I said it was DFIN or Toppan Merrill, and I'm
12 just summarizing that data.

13 Q. So when you summarize that data, the data that you're
14 looking at is every single earnings filing with the SEC during
15 that period, correct?

16 A. For US exchange-listed companies.

17 Q. So for US exchange-listed companies, you looked at every
18 single earnings filing with the SEC from January 1, 2018, to
19 September 30, 2020?

10:12 20 A. Yes.

21 Q. And you examined the accession number with each and every
22 one of those filings?

23 A. That's right.

24 Q. And you found that 44 percent were filed by DFIN or Toppan
25 Merrill?

1 A. Yes.

2 Q. What is the other 56 percent?

3 A. The other 56 percent includes accession numbers that are
4 associated with other filing agents, as well as accession
5 numbers that are associated -- the CIK is the same as the
6 company, so it's self, self files.

7 Q. So what does it mean to be self-filed?

8 A. The way I think about it is, you can use H & R Block to
9 have someone file something for you, your taxes for you, or you
10:13 10 can use TurboTax and you can file it by yourself.

11 I think the filing agents to the SEC, it's a similar
12 thing. So the self-filers are people that use software, and
13 then that software -- submits it to the SEC, and it comes into
14 the SEC as an accession number of self.

15 Q. So a company could use software and file its own earnings?

16 A. Yes.

17 Q. That would put it in the 56 percent?

18 A. That's right.

19 Q. Okay. Or it could hire somebody other than Donnelly
10:14 20 Financial or Toppan Merrill to file that filing?

21 A. That's right.

22 Q. That would also put it in the 56 percent?

23 A. Correct.

24 Q. Or it could hire Donnelly Financial or Toppan Merrill and
25 use them to file its earnings?

1 A. Do you mean use them to self-file their earnings?

2 Q. Use them to file on its behalf.

3 A. Yes, to file on its behalf.

4 Q. And that would put them in the 44 percent?

5 A. That's right.

6 Q. Why did you use this method to analyze the company's
7 market share versus their just their client list?

8 A. Because what we're concerned about is the literal earnings
9 release, and this is a measure of the earnings releases.

10:14 10 Q. So which is a more accurate measure, in your view?

11 A. This, using the accession number.

12 Q. And explain to us why the client list would not be
13 accurate.

14 A. A client list would tell you if it was ever a client.
15 Clients can change customer. You can use DFIN/Toppan for one
16 earnings, and you could use Workiva for another.

17 Q. So that's the 44 percent. What is the 96 percent?

18 A. I use the same exact method on his -- I'm sorry -- on
19 Klyushin's trading.

10:15 20 Q. And what did you observe about Mr. Klyushin's trading?

21 A. Using accession number, you find 96 percent of the
22 earnings trades he traded on were associated with DFIN and
23 Toppan.

24 Q. Once you had done this analysis and seen this disparity,
25 what did you do next?

1 A. I saw this phenomenon, I saw this pattern in the data, and
2 I thought it made sense to run a statistic to see if it was
3 relevant, if it was statistically significant.

4 Q. If what was statistically significant?

5 A. This difference.

6 Q. And so what was the test that you ran?

7 A. I ran a Fisher Exact Test.

8 Q. And, again, why based on this data did you choose to run
9 that test?

10:16 10 A. Because I was comparing two categorical variables.

11 Q. And, again, the categorical variables were on the one hand
12 what?

13 A. Traded verse not traded and filed by DFIN/Toppan or not
14 filed by DFIN/Toppan.

15 Q. Are you familiar with the term "null hypothesis"?

16 A. Yes.

17 Q. What's a null hypothesis?

18 A. It's the thing you test in statistics. The null
19 hypothesis here is that they're uncorrelated; there's no
10:16 20 relationship.

21 Q. So the thing you were testing is that there was no
22 relationship between how he traded and who the filing agent
23 was?

24 A. That's right.

25 Q. Can we look at Exhibit F, please. Did you prepare

1 Exhibit F?

2 A. Yes.

3 Q. What is it?

4 A. It's similar to the previous exhibit, but it breaks it out
5 by the eight traders.

6 MR. FRANK: Okay, so the government offers Exhibit F.
7 And I'm not sure I offered E, so I offer that as well.

8 (Exhibits E and F received in evidence.)

9 Q. And let's take this now column by column. In the second
10:17 10 column, after the traders' names, it says "IBES earnings events
11 during the traders' trading period." What is an IBES earnings
12 event?

13 A. IBES is the Institutional Brokers' Estimate System. It's
14 a common dataset to aggregate earnings announcements. I looked
15 for the total number of earnings announcements in that dataset
16 for U.S. exchange-listed companies for this time period.

17 Q. Okay, so that's all of the earnings announcements during
18 the period in which each of these individuals traded between
19 January 1, 2018, and September 30, 2020?

10:18 20 A. Yes. Or, sorry. It depends on -- yes, during the time
21 period in which the trader trades. That's why that number
22 changes.

23 Q. So explain that. If it's all for the same period between
24 January and September, '18 to '20, why are the numbers
25 different for each trader?

1 A. I compared the number of earnings events during the time
2 period in which the traders traded to the number of earnings
3 events that were issued during that time period. So Sladkov
4 has the most because he traded the longest, and M13 has the
5 least because he traded the shortest time period.

6 Q. I see. So Mr. Klyushin didn't actually start trading on
7 January 1?

8 A. That's right.

9 Q. He started later?

10:19 10 A. That's correct.

11 Q. So he has fewer earnings events during the period of his
12 personal trading?

13 A. That's right.

14 Q. Okay. So in his case, it's 38,359 earnings announcements
15 during that period?

16 A. That's right.

17 Q. In all U.S. listed stocks?

18 A. Correct.

19 Q. Okay, what's Column 2?

10:19 20 A. Column 2 is, using that accession number, which ones were
21 DFIN and Toppan Merrill earnings events of the 38,000?

22 Q. Okay. So during the period that Mr. Klyushin traded, of
23 those 38,000 earnings events, 16,810 were actually filed by
24 Donnelly Financial or Toppan Merrill?

25 A. That's right.

1 Q. And you did that on a release-by-release basis?

2 A. That's correct.

3 Q. In Column 3, what is the 44 percent?

4 A. That's the 16,000 divided by the 38,000.

5 Q. Okay. So that is the market share that you attributed to
6 Donnelly Financial and Toppan Merrill?

7 A. Yes.

8 Q. Now, you have a slightly different number of earnings
9 events in Column 1 for each of these traders and a different
10:20 10 number of Donnelly Financial and Toppan Merrill events in
11 Column 2. Why is the 44 percent the same all across the board
12 in Column 3?

13 A. Because the market share of DFIN and Toppan doesn't change
14 over time by more than 1 percent.

15 Q. So even though you were examining it on an
16 earnings-release-by-earnings-release basis, you found that the
17 number stayed consistent?

18 A. That's right.

19 Q. What is Column 4?

10:20 20 A. That's the number of events traded by the trader.

21 Q. So that's the number of earnings announcements around
22 which they actually traded?

23 A. That's correct.

24 Q. Okay. And what kinds of that number for Mr. Klyushin?

25 A. 356.

1 Q. And what is Column 5?

2 A. That's the number of, of those 356, how many were filed by
3 DFIN or Toppan Merrill.

4 Q. And what is the number for Mr. Klyushin?

5 A. 343.

6 Q. And what does the next column show?

7 A. The percentage, 343 of 356, and that's 96 percent.

8 Q. So that's the 96 percent that we looked at on the bar
9 chart that we looked at a moment ago?

10:21 10 A. Yes.

11 Q. Okay. And how does it compare, that percentage of trades
12 around DFIN or Toppan Merrill events, how does that compare
13 across the eight traders?

14 A. It's similar.

15 Q. So at the low end, it's 96 percent?

16 A. That's right.

17 Q. And at the high end?

18 A. 99 percent.

19 Q. Okay. What does the second-to-last column reflect?

10:21 20 A. This is the expected -- it's the amount that he traded
21 times the 44 percent. So that's the expected number that you
22 would -- it's the number of DFIN and Toppan null events you
23 would expect under the null hypothesis.

24 Q. Okay. So if his trading had reflected the 44 percent of
25 the market that they had, it would have been 166 trading events

1 instead of 343 trading events?

2 A. That would be your expectation if they're unrelated.

3 Q. Let's look at the last value, p-value. What is that?

4 A. That's the probability of seeing this pattern in the data
5 if you make the assumption that it was random.

6 Q. So, in other words, your null hypothesis again was what?

7 A. My null hypothesis is that the relationship between DFIN
8 and Toppan and their trading was uncorrelated, unrelated.

9 Q. And what does the p-value reflect?

10:22 10 A. The p-value reflects the probability of seeing this
11 96 percent or something more extreme if you assume that it's
12 uncorrelated.

13 Q. Okay. So if there's no relationship between the traders
14 trading and who the filing agent is, if that is not correlated,
15 the p-value tells you how often you would see what you actually
16 saw in the data?

17 A. That's right.

18 Q. Okay, which is that he traded in 343 DFIN and Toppan
19 Merrill events out of 356 events?

10:23 20 A. Yes.

21 Q. And what was the p-value in this case?

22 A. Less than one in a trillion.

23 Q. That's less than one in a trillion?

24 A. That's correct.

25 Q. So just so I understand, that means that if there's no

1 relationship between his trading and who the filing agent is,
2 you would expect to observe this result less than one in a
3 trillion times?

4 A. That's right.

5 Q. Can you explain that math.

6 A. Sure. What the Fisher Exact Test does in this case is,
7 the same as the setup of a classic probability question, which
8 is, if you have a jar that has 38,000 marbles in it and, you
9 know, 44 percent are red, what's the probability of, after
10:24 10 drawing 356 marbles, that 343 are red?

11 Q. So if you have a jar with 38,000 --

12 THE COURT: So the math is what? Is it just
13 continuing to multiply one out of two, one out of two?

14 THE WITNESS: Yes, that's right. It's similar to, you
15 know, if you say 44 percent is 50 percent, you say how probable
16 is it to flip a coin 356 times and get heads 343?

17 THE COURT: And the answer is -- it sounds very
18 basic -- you're just multiplying?

19 THE WITNESS: Yes. It's a little more complicated,
10:24 20 but, yeah, it's kind of -- the reason why the number gets so
21 big is because it's one over two to the 343th or something.
22 It's really --

23 THE COURT: It's exponential?

24 THE WITNESS: It's exponential growth, yes.

25 THE COURT: And did you do the math, or is this all

1 done by a --

2 THE WITNESS: A computer does it.

3 THE COURT: A computer does it, okay, and so it ends
4 up at one in a trillion. And say exactly what one in a
5 trillion is.

6 THE WITNESS: Can you repeat the question?

7 THE COURT: How do you explain to a jury what one in a
8 trillion means?

9 THE WITNESS: You would say, what's the likelihood of
10:25 10 seeing this if they're uncorrelated?

11 Q. So if we go back to your red "balls out of a jar" example,
12 how does that work? So there's 38 balls in the jar.

13 44 percent of them are red, and the rest are white, right?

14 A. Yeah, but the actual math that the Fisher Exact Test does
15 is, it finds every single possible combination of that, you
16 know, 16,000, 38,000, and it finds every single possibility,
17 possible combination; and it says, "How many times do you even
18 see 343?" And it's a really big number.

19 So Fisher Exact Test used to be that you weren't
10:26 20 supposed to use them for these big, large samples because it's
21 computationally expensive; it takes a long time for a computer
22 to run. But now computers are fast, so it can do this quickly.

23 Q. So it's measuring -- it's called an "exact test" because
24 it's giving you the exact number of times you would see this
25 result?

1 A. Right, and that's what -- the exact test is why you can
2 set it up as a probability question.

3 Q. Okay. So going back to the balls in the jar, there's lots
4 of different ways of picking out 356 balls, right? You could
5 pick out infinite combinations of 356 balls?

6 A. Trillions, it's not infinite, but, yes, trillions.

7 Q. But one in a trillion times, when you pick out 356 balls,
8 343 of them will be red?

9 A. Less than one in a trillion.

10:27 10 Q. Less than one in a trillion, okay.

11 THE COURT: Has this test been used in court before,
12 do you know?

13 THE WITNESS: I don't know.

14 Q. Well, did you use it in the hacking cases that you worked
15 on before?

16 A. Yes.

17 Q. And you mentioned the newswire hacking case.

18 A. Yes.

19 Q. Was it used in that case?

10:27 20 A. It was certainly submitted to the other side. I don't
21 remember if it was testified to.

22 Q. Okay. But in that case, there was expert testimony in
23 court that you supported about your statistical analysis?

24 A. Sorry. Repeat the question.

25 Q. In that case, you supported the expert analysis that was

1 presented in court?

2 A. Yes, I did.

3 Q. Okay. And that case did go to trial in a criminal case in
4 the Eastern District of New York?

5 A. Submitted the Fisher Exact Test to the other side.

6 Q. And across these traders, were the p-values consistent?

7 A. They were similarly, yeah, very small.

8 Q. Okay. And Judge Saris just asked you about using
9 software. What is the software that you use for this?

10:28 10 A. I use SAS and I use STATA.

11 Q. And are those standard off-the-shelf software products?

12 A. Used by statisticians, yes.

13 Q. Are there other tests you could have run to conduct this
14 analysis of whether there was a relationship between the
15 trading around earnings and who the filing agent was?

16 A. Yes.

17 Q. Without getting into detail, what are some of those tests?

18 A. A t-test, an ANOVA test, a chi square test, logistical
19 regression.

10:28 20 Q. Okay. So you mentioned a t-test. That's like the letter
21 T test?

22 A. T, yes.

23 Q. A chi square test, that's c-h-i?

24 A. That's right.

25 Q. The ANOVA test, A-N-O-V-A?

1 A. Yes.

2 Q. And a logistical regression?

3 A. Yes.

4 Q. You're aware that the defense has critiqued your use of
5 the Fisher's Exact Test in this case?

6 A. Yes.

7 Q. Since learning of that critique, have you run these other
8 tests as well?

9 A. Yes.

10:29 10 Q. And that also used software?

11 A. That's right.

12 Q. What was the results?

13 A. Similar results, same conclusions.

14 Q. Similar result across all those tests?

15 A. And just to be fair, these are different tests. So a
16 logistic regression I controlled for market and industry
17 factors. That's a different question, but I still found the
18 correlation was, you know, one in a trillion.

19 Q. And so controlling for market and sector, that's what
10:29 20 Judge Saris was asking about earlier, whether it was a
21 large-cap company in the S&P 500 or a small-cap company?

22 A. Right. It uses the literal market cap.

23 THE COURT: It uses the what?

24 THE WITNESS: The market cap, the shares outstanding
25 times price.

1 Q. So the actual market capitalization of the company?

2 A. That's right.

3 Q. And you also looked at what sector the companies were in?

4 A. Yes. Again, the reason why this makes sense is because if
5 you look at the market share by market cap, it stays around
6 44 percent.

7 Q. So it didn't change your conclusion as to the correlation
8 between the identity of the filing agent and the fact that the
9 traders traded in that earnings event?

10:30 10 A. That's right, it did not change my conclusion.

11 Q. And the degree of statistical significance, as measured by
12 the p-value, was similar across all these tests?

13 A. That's right.

14 THE COURT: Have you disclosed to the defense these
15 other tests?

16 THE WITNESS: Yes.

17 Q. Now, the second way in which you used the Fisher Exact
18 Test was to examine the correlation between trading direction
19 and subsequent earnings surprises; is that right?

10:31 20 A. That's right.

21 Q. So let's break down what that exactly means. What is
22 trading direction?

23 A. Whether the trader expected the stock to go up and bought,
24 or they expected the price to go down and shorted.

25 Q. So your assumption was, if somebody expects the stock

1 price to go up, they'll buy the stock?

2 A. Yes.

3 Q. And if somebody expects the stock price to go down,
4 they'll engage in what's known as a short sale?

5 A. That's right.

6 Q. And that's where you borrow the stock and sell it and then
7 buy it back at a later point in time?

8 A. Yes.

9 Q. So that's on the one hand. And on the other hand, you
10:32 10 said the variable was earnings surprises?

11 A. That's right.

12 Q. What is an earnings surprise?

13 A. The market has an expectation to what the earning is going
14 to be. When the earnings list comes out, the actual earnings
15 is released to the public, and people compare the actual
16 earnings release to what was expected. If they beat it by a
17 lot, that's called an "earnings beat," and if they miss by a
18 lot, it's called an "earnings miss."

19 Q. And what was your dataset for what the market's
10:32 20 expectations for each of these earnings announcements was?

21 A. I used IBES.

22 Q. IBES?

23 A. Yes.

24 Q. I-B-E-S?

25 A. Correct.

1 Q. And what does that stand for again?

2 A. The Institutional Brokers' Estimate System.

3 Q. So let's just talk about earnings estimates for a minute.
4 Who estimates how a company is going to perform quarter to
5 quarter?

6 A. Stocks are followed by analysts. These analysts work at
7 big banks, and they follow the particulars of the company.
8 They do a lot of research on the company. They know all the
9 context, and they make predictions about what the earnings is
10:33 10 going to be.

11 Q. And particularly they do that on a per-share basis,
12 earnings per share?

13 A. Yes.

14 Q. Then what does IBES do with those individual estimates?

15 A. It gathers them, and it gives a consensus analyst
16 expectation.

17 Q. And then you used the actual trading data that we looked
18 at earlier to determine how the traders traded, long versus
19 short?

10:33 20 A. Yes.

21 Q. Could we look at Exhibit G, please. Okay, so what does
22 Exhibit G show?

23 A. I saw a pattern in the data, and I wanted to show it. The
24 pattern in the data is that they traded long 86 percent of the
25 time when the company beat earnings by a lot, and they traded

1 long only 50 percent when the company missed by a lot.

2 Q. When you say "they," whose trading is reflected in
3 Exhibit G?

4 A. Klyushin.

5 Q. Okay, so this is just Mr. Klyushin's trading?

6 A. That's right.

7 Q. Did you see a similar pattern for the other traders?

8 A. Yes.

9 Q. So you talked about beating by a lot or missing by a lot.

10:34 10 What do you mean by "a lot"?

11 A. So there's a third category, so it's earnings beats,
12 earnings meets, or earnings misses. When it's an earnings
13 meet, you don't really know what direction the stock is going
14 to move; but if it's an earnings beat or an earnings miss, you
15 have a better expectation.

16 Q. Okay. So what did you do with respect to earnings meets?

17 A. I tried to take those out of this analysis.

18 Q. So you were just looking at the biggest earnings beats and
19 the biggest earnings misses?

10:35 20 A. That's right.

21 Q. And that was on the assumption that those will be
22 reflected most clearly in the movement of the stock?

23 A. That's right.

24 Q. Okay. And so how did you define that?

25 A. I took the data and I put it into quartiles for both

1 negative and positive, and I dropped the bottom quartile.

2 Q. Okay, so you just looked at the top three quartiles of
3 beats and the bottom three quartiles of misses?

4 A. Yes.

5 Q. Okay, and you found that -- tell us again what you found.

6 A. I found that they traded long when there were big earnings
7 surprises, and they traded short when there were big earnings
8 misses.

9 Q. And so, again, these are trades that they're placing
10:35 10 before the earnings are announced?

11 A. That's right.

12 Q. Okay. And so you found that 86 percent of the time that
13 they traded long, there was a large earnings surprise, a
14 positive earnings surprise?

15 A. Yes, a top three quartile or earnings surprise, yeah.

16 Q. And 85 percent of the time when they traded short, there
17 was a big earnings miss?

18 A. That's right.

19 Q. And sometimes, 14 or 15 percent of the time, they traded
10:36 20 in a direction you wouldn't expect based on the earnings?

21 A. Based on the earnings alone.

22 Q. And what did you do once you had observed this difference?

23 A. Sure. So I saw this pattern in the data. I wanted to
24 give some context, so I ran a statistic to see if this was
25 something that could have occurred by chance.

1 Q. And, again, what statistic was it that you ran here?

2 A. I used the Fisher Exact Test.

3 Q. Could we look at Exhibit 8. What was your null hypothesis
4 this time when you ran the Fisher Exact Test?

5 A. That the direction that they traded was unrelated to the
6 direction of the earnings surprise.

7 Q. That there was no correlation between those two things?

8 A. There's no correlation, that's right.

9 Q. And so, again, what are Columns 1 and 2 showing?

10:37 10 A. The same thing I charted. So it shows that when there was
11 a negative earnings surprise, they rarely traded long, and when
12 there was a positive earnings surprise, they almost always
13 traded long, 76 to 93 percent traded long.

14 Q. And what does the third column show?

15 A. That's the result of my test of how often would you see
16 this pattern in the data if you assume that, under the null
17 hypothesis, that you assume that they're unrelated?

18 Q. Okay. And what was your conclusion?

19 A. That the p-value was less than one in a trillion, and that
10:38 20 I reject the null hypothesis that they were trading by chance
21 alone.

22 Q. So when you reject the null hypothesis, you're saying: If
23 these two events were uncorrelated, if there was no
24 relationship between how they traded and whether or not there
25 was an earnings surprise up or down, you would expect to see

1 what you actually observed in the data less than one in a
2 trillion times?

3 A. That's right.

4 Q. And just to be clear, why would the null hypothesis be
5 that you would not expect there to be a relationship between
6 the direction that they traded and the surprise?

7 A. Because these are surprises, they're unexpected by the
8 market. They're movements that are unexpected by the market
9 that are contained in the earnings release.

10:38 10 Q. And that's why the stock moves afterwards?

11 A. That's right, because it's incorporating new information
12 into the stock price.

13 THE COURT: Did you look at the particular companies
14 that were being traded?

15 THE WITNESS: I looked at some of them.

16 THE COURT: So was that -- the trading, could that
17 have been predicted by what was in the, I don't know, public
18 market or having a good analyst or consultant? Take Tesla.

19 THE WITNESS: So, yeah, people can and do try to
10:39 20 predict it, and it's possible to try to predict, yes.

21 THE COURT: With financial advisors, right?

22 THE WITNESS: Yeah, anyone who does an earnings trade
23 think they can beat the market. This just shows that in the
24 data, that they are definitely beating the market.

25 THE COURT: So a good analyst might be one good

1 explanation?

2 THE WITNESS: That's right.

3 Q. Did you try to offer an explanation, or are you just
4 showing a correlation?

5 A. I'm describing the data.

6 Q. So there could be explanations?

7 A. There are likely explanations.

8 Q. One explanation might be that somebody is a really good
9 analyst and is able to predict earnings surprises 86 percent of
10 the time?

10:40

11 A. That's right.

12 Q. Even though the rest of the market isn't able to do it?

13 A. That's correct.

14 Q. Another explanation might be that they had inside
15 information?

16 A. That's correct.

17 Q. They knew something the market didn't know?

18 A. That's correct.

19 Q. Are you offering an opinion as to which of those things
10:40 20 explains the data?

21 A. No.

22 Q. You're just observing the correlation?

23 A. That's right.

24 Q. Okay. The third major test that you ran was examining the
25 start of trading time versus when a download occurred on the

1 Donnelly Financial system, correct?

2 A. That's right.

3 Q. Could you explain to Judge Saris what that means.

4 A. I received a database that showed the timing that
5 downloads of, like, Exhibit 99, among others, were downloaded
6 from the DFIN system.

7 Q. Okay. Where did you get that download time data from?

8 A. It was given to me.

9 Q. And it came from Donnelly Financial?

10:41 10 A. I believe so.

11 Q. And you for this purpose only looked at Donnelly
12 Financial, correct?

13 A. That's correct.

14 Q. Why?

15 A. I only had data for Donnelly Financial.

16 Q. Okay. So what information was in those logs?

17 A. There was a lot of information, but the relevant
18 information was that there were downloads occurring in
19 particular companies at particular times.

10:41 20 Q. Okay. And a download is when a document is being
21 downloaded from the system?

22 A. That's right.

23 THE COURT: Let me ask you. That's curious. Why
24 didn't the other company provide the data?

25 THE WITNESS: I don't know.

1 THE COURT: They didn't give a reason?

2 MR. FRANK: I can answer that, Judge. He's not able
3 to answer that question.

4 THE COURT: Well, he may not know, right.

5 MR. FRANK: The reason is that the logs that they
6 maintain are different at the two companies, so they just have
7 a different degree of specificity in their log data. So why
8 don't you just answer her questions.

9 MR. KOSTO: By way of example, your Honor, for the
10:42 10 dataset of access to Toppan Merrill's network, the logging that
11 the company had in place when it discovered that there was an
12 intrusion was approximately 90 days' worth of history. So most
13 of the logs that exist for Toppan Merrill are in that 90-day
14 window.

15 As to Donnelly Financial, they had more robust logging
16 going on on their network before they discovered the intrusion,
17 so they had approximately two years plus or minus of data,
18 which allows a more robust example for Mr. Clarke to look at.

19 THE COURT: So the other financial analyst eliminates
10:42 20 it after a certain --

21 MR. KOSTO: I think a fair way to say it would be, it
22 tracks for 90 days, and then it falls off the ledger so that
23 they're not storing --

24 THE COURT: So they don't have that data?

25 MR. KOSTO: They do not have that data, your Honor.

1 Q. So what are the variables that you were looking at for
2 purposes of this third test?

3 A. I was looking at the timing of the download and the timing
4 of the trade.

5 Q. To see if there was a relationship between when the
6 traders traded and when somebody downloaded something from
7 Donnelly Financial?

8 A. That's right, because the expectation is that these
9 shouldn't be related in any way.

10:43 10 Q. And why would the expectation be that you should not see a
11 relationship?

12 A. I think common sense: Why should someone downloading data
13 for their job have anything to do with traders trading in
14 Russia?

15 Q. Let's take a look at Exhibit I. What is Exhibit I?

16 A. This is one example of one trading episode.

17 Q. Okay, so just walk us through what we're looking at here.

18 A. Sure. So this is one trade that Klyushin made in Sprouts
19 Farmers Market, which is a grocery store chain, on May 5 and 6,
10:44 20 2020.

21 Q. Okay. So what happened on May 5 at 3:53 a.m.?

22 A. At 3:50 a.m., I can see from the log file that the Sprouts
23 Farmers Market earnings press release was downloaded from
24 someone, a Jason Lewis account and a particular IP address.

25 Q. So somebody using the employee username Jason Lewis from

1 that IP address downloaded the earnings release at 3:53 a.m.?

2 A. Eastern, yes.

3 Q. What happened that same day at 11:50 a.m.?

4 A. Klyushin began buying Sprouts Farmers Market.

5 Q. What happened at 4:02 p.m.?

6 A. After market closed, the earnings were released to the
7 public.

8 Q. What happened the following morning at 9:31 a.m.?

9 A. Klyushin began selling his shares in Sprouts Farmers

10:45 10 Market.

11 Q. And did he sell all of his shares or some of his shares?

12 A. He sold all of his shares.

13 Q. So what was his total profit from that one-day trade?

14 A. \$72,000.

15 Q. And what was his return in that one day?

16 A. 3.1 percent.

17 Q. Let's take a look at Exhibit J.

18 THE COURT: Let me just talk about timing. How close
19 are you to finishing?

10:45 20 MR. FRANK: Within ten minutes.

21 THE COURT: Okay, so we'll finish at the break, we'll
22 have a break, and then you'll have a chance to cross.

23 MR. NEMTSEV: Thank you, your Honor.

24 Q. So what is Exhibit J?

25 A. It's a comparison of the trading time verse the download

1 time, and it shows that nearly all of the trades occurred after
2 the download time.

3 Q. So let's put up Exhibit I on the left and Exhibit J on the
4 right. Okay, so on Exhibit I, we see that there was a download
5 at 3:53 a.m.?

6 A. That's right.

7 Q. So if we look at Exhibit J, is that going to be reflected
8 in one of those little blue dots?

9 A. That's right.

10:46 10 Q. So the download time, that's on the X axis?

11 A. Yes.

12 Q. So 3:53 a.m., where would that be on the X axis?

13 A. I think that's 12 hours before, so minus 12 hours.

14 Q. Okay, so that's to the right a little before -- about
15 right about where the cursor is?

16 A. That's right.

17 Q. Okay. And then the trade, the first trade by Mr. Klyushin
18 is at 11:50 a.m.?

19 A. Yeah, that's about minus four hours.

10:47 20 Q. Minus four hours before the earnings announcement?

21 A. That's right.

22 Q. That's on the Y axis?

23 A. Yes.

24 Q. So where would that be? The earnings announcement is up
25 at the top?

1 A. It's in the top right.

2 Q. That top red line is the earnings announcement?

3 A. Yes.

4 Q. Okay, so somewhere in -- let me see if I can mark it.

5 THE CLERK: Our annotation is broke. It's not
6 working.

7 MR. FRANK: So, Ms. Lewis, if you could just move your
8 cursor --

9 THE COURT: Is Lynn here?

10:47 10 THE CLERK: She will be at the break.

11 THE COURT: The break, good.

12 MR. FRANK: So if your Honor can see where the cursor
13 is -- oh, Ms. Lewis has been able to make a mark. I think it's
14 probably a little to the left of that Ms. Lewis.

15 Q. Is that roughly where this Sprouts Farmers Market trade
16 would be represented by one of those blue dots?

17 A. That's right.

18 THE COURT: Where is that? I'm sorry.

19 MR. FRANK: The top right, your Honor sees a little
10:47 20 red circle?

21 THE COURT: Oh, there it is, yes.

22 Q. So that's showing, just to be clear, that the trade was
23 about four or five hours before the earnings announcement --

24 A. Uh-huh.

25 Q. -- on the Y axis, and on the X axis, about 12 hours, that

1 the download was about 12 hours before the earnings announcement?

2 A. Right.

3 Q. Okay. And so this box is shaded, half of this box is
4 traded in gray. What's reflected in the gray shaded portion?

5 A. That means that the trades occurred after the download.

6 Q. In other words, the trade occurred before the earnings
7 announcement but after the download?

8 A. That's right.

9 Q. And what's reflected by the fact that we see concentrations
10:48 10 of trades up near the top red line?

11 A. That means they often traded in the day before earnings.

12 THE COURT: Let me ask you. I'm noticing this is in
13 the height of the pandemic just as everything was slowing down.
14 Is there a way in which he was trading, shorting on news about
15 the pandemic?

16 THE WITNESS: I -- I don't know.

17 THE COURT: Right. You're just simply saying it didn't
18 happen by chance?

19 THE WITNESS: That's right, that I see a pattern in
10:49 20 the data, and the question, is this a relevant pattern? The
21 answer is, yes, it's a relevant pattern.

22 THE COURT: What is Sprouts Farmers Market?

23 THE WITNESS: One of the things he trades. It's I
24 think like an organic farmers' market, kind of a grocery store,
25 like a Whole Foods competitor.

1 THE COURT: All right.

2 MR. FRANK: Okay, if we could look at -- well, if you
3 could take down Exhibit I, and let's just look at Exhibit J,
4 Ms. Lewis.

5 Q. What was your null hypothesis here again?

6 A. My null hypothesis was that the trade time and the
7 download time should be unrelated. You should see no pattern
8 in the data.

9 Q. And that's because your assumption is, somebody deciding
10:49 10 to trade in Moscow would have no relationship to when an
11 earnings release is downloaded?

12 A. I think that's a good expectation, yes.

13 Q. And what was the test you ran?

14 A. I ran a permutation test.

15 Q. What is that?

16 A. It's a test of continuous variables.

17 Q. So continuous variables again being time?

18 A. That's right.

19 Q. And what did the test show?

10:50 20 A. The test showed that there is a relationship between the
21 trade time and the download time, and that relationship is that
22 the trades occur after download.

23 Q. And were you able to calculate a p-value?

24 A. Yes.

25 Q. What was that?

1 A. For all traders, I think it was less than one in a
2 million.

3 Q. One in a million?

4 A. That's right. And this test requires me to run a
5 simulation a million times.

6 Q. Okay, so you ran it a million times, and you found that if
7 you do this a million times, you'll find this pattern less than
8 one in a million times?

9 A. That's right.

10:51 10 Q. And essentially what it shows is, even when the trade
11 occurred before the earnings announcement, the download
12 occurred even earlier?

13 A. That's right. Even when they traded three days
14 beforehand, the download occurred three days beforehand.

15 Q. Or more?

16 A. Or more.

17 Q. So in almost no instances did they trade after a download?

18 A. That's right.

19 Q. The download almost always occurred before?

10:51 20 A. That's right.

21 Q. And that's why it's in the gray box on the left?

22 A. That's right.

23 Q. Okay. Now, this is for all traders?

24 A. That's right.

25 MR. FRANK: Can we bring up Exhibit K on the right,

1 please.

2 Q. Okay, what's in Exhibit K on the right?

3 A. The same analysis for Klyushin alone.

4 Q. And what did you observe about how Mr. Klyushin's trading
5 versus download time compared with the other traders?

6 A. Similar.

7 Q. And what was the p-value for Mr. Klyushin?

8 A. It was 17 in a million.

9 Q. Seventeen out of a million?

10:52 10 A. That's right.

11 Q. Is that also statistically significant?

12 A. It is.

13 Q. What would this chart look like if there was no
14 relationship between trading and download time? Where would
15 those dots be distributed?

16 A. Your expectation, if they were unrelated, is that they
17 should be distributed kind of throughout the box. You should
18 see a little cloud in every little portion.

19 Q. And that's because sometimes he would be trading before a
10:52 20 download, sometimes he would be trading after a download, and
21 it would be distributed all over this box?

22 A. Yes. You would split up the number of dots across the
23 thing as it relates to the distribution of the download time.

24 MR. FRANK: You can take that down.

25 Q. One of the defense criticisms of your analysis was that

1 you did not analyze trading before January 1, 2018.

2 A. Yes.

3 Q. How many traders are you aware of of the eight that had
4 accounts prior to January 1, 2018?

5 A. I'm aware of one trader.

6 Q. And who was that?

7 A. Sladkov.

8 Q. So did the defendant, to your knowledge, have a brokerage
9 account for which you had records prior to January 1, 2018?

10:53 10 A. No.

11 Q. Another of the defense criticisms of your analysis was
12 that you stopped analyzing the trading data after September 30
13 of 2018?

14 A. Yes.

15 Q. Could we look at Exhibit I, please. I'm sorry, Exhibit L.
16 My mistake. What is Exhibit L?

17 A. This is a graph of the dollars traded by month.

18 Q. Okay. And so in the blue, it's earnings events handled by
19 Toppan Merrill?

10:54 20 A. I'm sorry. The green is Toppan Merrill.

21 Q. The green is Toppan Merrill?

22 A. Yes.

23 Q. And the blue is Donnelly Financial?

24 A. That's right.

25 Q. And the gray is other?

1 A. Yes.

2 Q. And here are we looking at all trading or just trading
3 around earnings releases?

4 A. This is just earnings releases.

5 Q. And this is for all eight traders?

6 A. Yes.

7 Q. And what does this chart show about the frequency of their
8 trading?

9 A. It shows that there is little trading at the beginning of
10:54 10 2018, and that grows over time, and then it declines.

11 Q. And what happens in September of 2020?

12 A. There's no trading in September of 2020.

13 Q. There's no earnings-related trading that you saw?

14 A. That's right.

15 Q. It just drops off a cliff?

16 A. Uh-huh.

17 MR. FRANK: Ms. Lewis is reminding me I need to offer
18 Exhibits J through L.

19 (Exhibits J and L received in evidence.)

10:55 20 Q. Since the defense has critiqued you for not looking after
21 September 30, have you taken a look at those results?

22 A. I have. I did not do my full analysis because it's
23 time-intensive, but I have looked at it.

24 Q. And without doing a full analysis, what was your
25 observation?

1 A. There were only eleven traders -- I'm sorry -- only eleven
2 accounts, and the trading is less and the profits are less.

3 Q. So they trade less and they make less money?

4 A. And they make less money per trade.

5 MR. FRANK: Thank you.

6 THE COURT: Was that disclosed to the defense?

7 MR. FRANK: There's no formal analysis, Judge. He's
8 just saying what he did.

9 THE COURT: Back-of-the-envelope kind of thing?

10:55 10 MR. FRANK: He's just looking at and seeing less
11 trading and less profitable trading. He didn't do an analysis.

12 THE COURT: I'm not sure he can testify to that
13 without disclosing it.

14 MR. FRANK: I have no further questions, your Honor.

15 THE COURT: All right. So I'm just saying that if you
16 want to testify about it, you just have to disclose the math.

17 MR. FRANK: Understood, your Honor.

18 THE COURT: Okay.

19 Now, would you like to take a break?

10:56 20 MR. NEMTSEV: Yes, please, your Honor.

21 THE COURT: And so what are you anticipating? Are you
22 going to do a full cross right now?

23 MR. NEMTSEV: Yes, I think I will.

24 THE COURT: Okay. So why don't we come back here
25 around 11:20-ish. Does anybody have any conflicts?

1 MR. FRANK: No, your Honor.

2 THE COURT: So come back here around 11:20. How long
3 do you think you might need? I know it's hard to predict.

4 MR. NEMTSEV: Forty-five minutes.

5 THE COURT: Oh, okay. And what do we do about your
6 expert? We don't know yet?

7 MR. NEMTSEV: We don't know yet.

8 THE COURT: First of all, he's sake, and second of
9 all, you don't know if you need him?

10:56 10 MR. NEMTSEV: Yes.

11 THE COURT: Okay, so we'll come back around 11:20.
12 That sounds great. Thank you.

13 MR. FRANK: Thank you.

14 MR. NEMTSEV: Thank you, your Honor.

15 THE CLERK: All rise.

16 (A recess was taken, 10:57 a.m.)

17 (Resumed, 11:30 a.m.)

18 THE COURT: Okay, go ahead, sir.

19 MR. NEMTSEV: Thank you, your Honor.

11:31 20 CROSS-EXAMINATION BY MR. NEMTSEV:

21 Q. Good afternoon Mr. Clarke. My name is Mark Nemtsev. I
22 represent --

23 THE COURT: You're way too soft.

24 MR. NEMTSEV: Oh, God, judge I try and I try. Maybe
25 I'll get it right by the end of this trial.

1 Q. Mr. Clarke my name is maximum Nemtsev. I represent the
2 defendant, Vladislav Klyushin, in this case.

3 A. Nice to meet you.

4 Q. Nice to meet you?

5 A. Great name.

6 Q. Thank you. Likewise. Up on the board is your resume`; is
7 that correct?

8 A. Correct.

9 Q. That is something that you submitted in connection with
11:31 10 your analysis and your expert disclosure which you signed,
11 correct?

12 A. Yeah. I have an updated resume` as well.

13 Q. What are the differences between the /SR-RS and this
14 resume`?

15 A. I think I changed my title to senior financial analyst to
16 reflect the name change, and I think the -- well, I don't know
17 every difference.

18 Q. Understood. Going through your educational background,
19 you have a bachelor of arts cum laude in economics mathematics
11:32 20 minor, correct?

21 A. That's correct.

22 Q. Graduated in 2011, approximately 12 years ago at this
23 point?

24 A. That's right.

25 Q. You don't have a major in statistics but you focused your

1 course work according to your testimony in statistics, right?

2 A. That's right.

3 Q. Now, your professional experience and employment, you're a
4 research associate at Cornerstone?

5 A. Yes senior analyst and associate yeah ().

6 Q. After that you exclusively worked for the Securities and
7 Exchange Commission, correct?

8 A. That's correct.

9 Q. First as a financial economist and then a senior financial
10 economist? Sorry?

11 A. First as an economist then a financial economist.

12 Q. And then subsequently a senior financial economist?

13 A. That's right.

14 Q. And you work in this division of economic and risk
15 analysis, the Office of Litigation Economics, correct?

16 A. That's correct.

17 Q. And essentially what you do, what your task is to support
18 prosecutors to support prosecutors from the SEC in litigating
19 these cases, correct?

11:33 20 A. I do the data work for them. I like to say I do math for
21 lawyers sometimes.

22 Q. And have you ever assisted a defendant or a defense
23 attorney in connection with their analyses?

24 A. When I worked at Cornerstone Research.

25 Q. And what did you do at Cornerstone Research?

1 A. Will I was -- essentially the same stuff. I summarized
2 data draw conclusions from that data using statistics, among
3 other things.

4 Q. Did you use the Fisher Exact Test?

5 A. I did.

6 Q. The non-permutation --

7 A. I never used a permutation test at Cornerstone Research.

8 Q. Understood. Did you testify behalf the defense while you
9 were at /SR-RS research?

11:33 10 A. No, but my job was to support experts.

11 Q. Understood. Now, you said you testified in the SEC v.
12 Sergeant case?

13 A. That's correct.

14 Q. Before Judge Young in this courthouse?

15 A. I did it via Zoom, but, yes.

16 Q. And what was the issue that you were testifying on?

17 A. The issue had to do with the feasibility as to whether or
18 not you could calculate harm to shareholders, in light of the
19 Supreme Court decision of *Liu*.

11:34 20 Q. Which deals with disgorgement issues?

21 A. That's right.

22 Q. It wasn't the comparison of whether or not a trading
23 correlates to, for example, a filing agent or something else,
24 correct?

25 A. That's correct.

1 Q. You featured some selective case work, correct?

2 A. Sure.

3 Q. You worked an insider trading case where you calculated
4 ill got even gains; is that correct?

5 (Witness examining document.)

6 A. Uhm, yeah, this -- this seems off to me for some reason.
7 I submitted a new CV that would be more correct. Calculating
8 ill got even gains from trades made with material nonpublic
9 information," that's right, that's right.

11:35 10 Q. And is this the SEC v. Sergeant case?

11 A. No.

12 Q. Did you testify in connection with this case?

13 A. No.

14 Q. Did you submit an expert report in connection with this
15 case?

16 A. No, but I supported the expert on this case.

17 Q. Was there a *Daubert* hearing on this case?

18 A. I don't think so. No.

19 Q. Did anybody ever testify to the analytics that you've done
11:35 20 in this case?

21 A. In the -- this was the news /SR-RS hack yes someone did.

22 Q. Going to the newswire hack, this is the calf chess key
23 case in the district of New York?

24 A. Yes, E D N Y.

25 Q. So you weren't the main status in that case in that case?

1 A. I don't know what you mean /SR-RS.

2 Q. You weren't the head witness presenting any expert
3 testimony on the subject matter, correct?

4 A. Correct.

5 Q. You just supported the statistician in that case?

6 A. Yes.

7 Q. You helped submit an expert report in that case?

8 A. I don't think there was an expert report submitted in that
9 case.

11:36 10 Q. So no one testified as an expert in that case, correct?

11 A. No. Someone testified as an expert in the newswire
12 hacking case.

13 Q. But did they never submit an expert report?

14 A. It's criminal so you don't submit an expert report.

15 Q. No one submitted an expert disclosure?

16 THE COURT: By the way, that's not necessarily so.

17 THE WITNESS: Yeah, sorry, I'm not a legal -- I don't
18 know the answer.

19 Q. Was there a *Daubert* hearing similar to this one to
11:36 20 determine whether the methodologies used in that case were
21 accurate, to your knowledge?

22 A. To my knowledge, no.

23 Q. And were the statistics that you present here, the one in
24 a trillion chance, one in a million case, were those admitted,
25 to your knowledge, in that case?

1 A. What do you mean by admitted?

2 Q. Meaning was that evidence presented to a jury, deciding
3 the fate of a criminal defendant?

4 A. Were the words -- were the words "one in a trillion ooh
5 used? Is that your question?

6 Q. Was that evidence present to the jury?

7 A. I don't -- I don't know. I don't think so.

8 Q. Thank you. Do you know any criminal case that is serviced
9 by your litigation assistance department where similar
11:37 10 statistics, the Fisher Exact Test and the other tests that you
11 used, were admitted to prove the correlation of events?

12 A. In the newswire hack case, the permutation test was used
13 about timing; and in the EDGAR hack, we used a Fisher Exact
14 Test in a very similar --

15 Q. But in the newswire case you just testified that you don't
16 know whether those statistics ever made it to the jury correct?

17 A. I'm sorry I was talking about the Fisher Exact Test the
18 permutation certainly did.

19 Q. And /SR-RS?

11:38 20 A. The timing of the download versus the */* the timing of
21 the up load to the newswire service and the timing of the
22 trade.

23 Q. Understood but you don't know whether the Fisher Exact
24 Test or you believe that the Fisher Exact Test wasn't admitted
25 in that case is this /(?

1 A. Uhm, I don't -- I don't have a full recollection of this,
2 but I know that we submitted an exhibit that had a Fisher Exact
3 Test in it. I don't know if it was actually -- I don't know
4 the distinction in your mind of testified verse not testified
5 and submitted. I don't know these distinctions.

6 Q. Understood, understood. So, now, moving on--and when were
7 you first assigned to deal with this case?

8 A. This case?

9 Q. Yes.

11:39 10 A. Like late August because it was after I came back from
11 paternity leave.

12 Q. In late August of 2022?

13 A. Of 2022, yes.

14 Q. Okay, was there anybody working on this case from your
15 division before that?

16 A. Yes.

17 Q. And who was that?

18 A. ... I think the names were Katie sheen foster and
19 consistent or are Hurley? Yeah, yes, consistent or Hurley.

11:39 20 Q. Who gave you the dataset to analyze in this case?

21 A. I did the -- I got the -- I did it myself.

22 Q. You acquired the dataset yourself, meaning --

23 A. Specifically I checked. There were 30 Excel files. I
24 uploaded them into SAS which is mill statistical program. I
25 compiled the data by myself, and then I did all -- I did it all

1 myself.

2 Q. Who asked you to limit your analyses from January, 2018,
3 to September of 2020?

4 A. Who asked me to do that? The lawyers on the case.

5 Q. So Mr. Frank and Mr. Cost asked you to limit your analysis
6 specifically to the conspiracy period correct?

7 A. Yeah. I asked what is the time period for this analysis
8 would happen. They said 11 through 930.

9 Q. So you excluded any trading that was done by these
11:40 10 defendants or prior to January, 2018, any trading that they did
11 after September of 2020, correct?

12 A. I excluded yes trades outside of that time period from my
13 analysis.

14 Q. And would you agree that having -- and I think you said
15 this -- large sample sizes, more data is good in statistics?

16 A. It depends on the circumstance, but typically, yes.

17 Q. So was there any reason to arbitrarily -- strike that. Is
18 there any reason to limit this data to exclude trading before
19 January of 2018 and after September, 2020?

11:41 20 A. I think it has to do with the other evidence that might be
21 presented in this case. I don't know.

22 Q. But it would be relevant tower analysis, for example, if
23 there's no hacked, meaning no one accessed any reports of
24 device inn and yet of there was trading concerning device inn
25 related stocks and trading /SR-RS?

1 MR. FRANK: Objection assumes facts not in evidence.

2 MR. NEMTSEV: Your Honor he's an expert he's allowed
3 to assume facts.

4 MR. FRANK: He's not an expert to when there was a
5 hack.

6 THE COURT: Well, what is the hack you want him to
7 assume.

8 MR. FRANK: I think there's an assumption of when
9 there was a hack.

11:41 10 MR. NEMTSEV: The prosecutors made that assumption for
11 him. They gave him the time period when they allege was a
12 hack.

13 THE COURT: What's the question again?

14 MR. NEMTSEV: The question is wouldn't it have been
15 relevant to your statistical analysis to have trades in filing
16 agent or device inn related client stocks /(where there was no
17 hack or evidence of a hack, yet there was trading by these
18 traders around earnings reports of those companies?

19 MR. FRANK: My objection, your Honor is.

11:42 20 THE COURT: /SR-RS go ahead.

21 A. I wasn't really aware of when the hack occurred. I was
22 given the time period. It wouldn't affect my analysis. Answer
23 a different question. The question I'm answering is, does this
24 relationship exist during the time period that I looked? If
25 you had a different time period, it would answer a different

1 question: Does the relationship exist over that different time
2 period () .

3 Q. Assume that a relationship exists over a different time
4 period, wouldn't that be relevant to show that it's not whether
5 there was a hack and information was obtained through a hack
6 from the filing agents. There's another factor influencing the
7 trading decisions or influencing what stocks to trade.

8 A. Sorry, can you repeat the question.

9 THE COURT: In other words, if you saw the same
10 conduct before that time period, would that have a material
11 impact on your opinion?

12 THE WITNESS: No. It would raise a question as to was
13 there a hack during that period or not? If I found the same
14 result including the preperiod, I would find -- I didn't do the
15 analysis. I don't know the answer, but if I were to find it,
16 there would be something about the trading strategy during that
17 time period that was favoring device inn and Toppan. It
18 doesn't change my analysis.

19 Q. So to put together your data you used the /S*EGS numbers
11:44 20 correct?

21 A. That's correct.

22 Q. You did not use a client list?

23 A. I did not /SR-RS.

24 Q. And that could lead to a lower number of stocks associated
25 or earnings reports associated with filing agents 1 and filing

1 agents 2 than those filing agents actually handled, correct?

2 A. I didn't do that analysis. I don't know the answer.

3 Q. Well, you did review in the first quarter of 2019 stocks
4 or subpoenas that were clients of Filing Agent 1 and 2 who used
5 these filing agents to compile this report, yet they filed it
6 by other means, sometimes by themselves but they just didn't
7 request the filing agents to file it correct?

8 A. I did do that yes.

9 Q. And you only did that for one quarter?

11:44 10 A. I did only do that for one quarter.

11 Q. And how many stocks did you find that weren't filed by the
12 filing agents but were actually served by the filing agents?

13 A. Do you want me to go into detail.

14 THE COURT: I was going to ask the same question. How
15 do you understand the term serviced?

16 THE WITNESS: So I'm happy to go through my process ()
17 (question above) so to answer your question like what's in the
18 other -- I saw 44 percent was DFIN and Toppan as when you use
19 the /S*EGS number. I looked attain was wondering well, what's
11:45 20 in the other 56 percent, why is it so big? A lot of those were
21 self-. I also knew that there was a different company that's
22 called Workiva that if you look at the industry, it has a large
23 market share. I say why am I not seeing this in the data? So
24 I went to the Q 12019 to try to see what that was. It involved
25 a lot of looking through filings. So I looked through the

1 filing. I went through the filing and I saw there's a little
2 part of the filing that will give you a, like it will say "This
3 document was created by Workiva." So I looked and I counted
4 all the time it said Workiva I counted all the times it said
5 something else. I found that most of them, I don't remember
6 the exact numbers, but I think about ninety percent were
7 Workiva which aligned with my expectation from what the market
8 share said, and I think about 2 percent were from Toppan
9 Merrill and there were zero percent from device inn.

11:46 10 Q. And that's only your analysis as to the first quarter of
11 2019?

12 A. That's right.

13 Q. You didn't do the same analysis for the remaining ten or
14 eleven quarters that you're opining on?

15 A. I have no reason to believe that the market share of the
16 self-filing changed over time.

17 Q. But you would agree that at minimum, those 44 should have
18 been counted in your figures, correct?

19 THE COURT: I am strange to hear you. I'm sorry.

11:47 20 Q. Would you agree that it would be more accurate to include
21 those 44 in the number of filing agent and Filing Agent 2 or
22 device inn and Toppan companies that service stocks?

23 A. I use /S*EGS number. I wanted to have an apples to apples
24 comparison, right? So there existed times in that 96 times I
25 think you guys pointed out avenue net, that would have /(--

1 that were self-filed but you could look at the document and see
2 that it was Toppan Merrill. You would have to include that in
3 the 96 percent so that 96 could have been 98 percent but you
4 have to include that on the other side too. So to keep it
5 consistent, which I thought was most important, I used /S*EGS
6 number and my conclusion then has to be -- and I think I'm
7 pretty clear about that -- my conclusion is that is the trading
8 of them associated with the DFIN and Toppan earnings as
9 ascribed to by /S*EGS number.

11:48 10 Q. And you excluded them from both ends meaning you excluded
11 avenue net from the thumb of companies /SR-RS you excluded it
12 from Mr. Klyushin's trading?

13 A. I think exclude is the wrong word. I chose to use /S*EGS
14 to include. A /S*EGS number does not include those.

15 Q. But wouldn't it be more accurate to use the filing lists
16 of both filing agents to determine the number of stocks or
17 companies serviced by these two?

18 A. Sorry. Could you repeat the question.

19 Q. Wouldn't it be more repeat, meaning a filing agent /SR-RS
11:48 20 responsible for everything related to an earnings report other
21 than the filing of it and that filing agent would be excluded
22 from your total calculation, correct?

23 A. Yeah, I do exclude those, /SR-RS include them. But my
24 question --

25 (Discussion off the record.)

1 THE COURT: Let me just ask, was avenue net a
2 self-report?

3 THE WITNESS: Avenue net was a self-report, yes.

4 THE COURT: How did that show up in your analysis?

5 THE WITNESS: Self-percent would be in the 56 percent
6 and it would be in the 4 percent.

7 THE COURT: Both.

8 THE WITNESS: Both keep apples to apples.

9 Q. But you would also agree that the vast majority
10 Mr. Klyushin did not trade in the vast majority of stocks that
11 were serviced by these two /TPAOEULGTS?

12 A. Yes. He traded in a subset of the stocks.

13 Q. A very small percentage, under 20 percent, correct?

14 A. I don't know the answer to that, but I believe you.

15 Q. Do you know how many stocks file earnings reports with the
16 SEC in a given year?

17 A. I think it's four to five thousand of U.S. exchange
18 stocks.

19 Q. And how many stocks did you identify that Mr. Klyushin
11:50 20 traded?

21 A. Over the time period? I think it was -- it's in my
22 exhibit but it's 350 something.

23 Q. Earnings related, but how many total?

24 A. Did he trade in? I don't remember.

25 Q. You excluded from your analysis any time that he traded in

1 another company that wasn't serviced by the /TPAOEUGTS,
2 correct?

3 A. No. The reason why it's 96 percent is because the other
4 4 percent means that it wasn't DFIN and Toppan.

5 Q. But it's not 4 percent, correct?

6 A. What?

7 Q. Hold on. Let me put this up. Maybe it will be a little
8 clearer. So this is Mr. Klyushin's account, correct?

9 A. Correct.

11:51 10 Q. So you say that he traded in 343 DFIN and Toppan Merrill
11 events traded by trade?

12 A. That's correct, yes.

13 Q. And that he traded in total events traded by traders
14 /SR-RS?

15 A. Right.

16 Q. You don't include in your numbers any trading that isn't
17 related to DFIN and Toppan, correct?

18 A. There are 13 trades that are nonDFIN and Toppan. That's
19 343 minus 356.

11:51 20 Q. So 13 of those are not included, and you also don't
21 include any trades that are outside of --

22 A. What do you mean are not included? I don't --

23 Q. 56 trades that's all that Mr. Klyushin traded --

24 A. These are earnings trades these are earnings trades, yes.

25 Q. These are earnings trades. How many nonearnings trades

1 were?

2 A. No nonearnings trades, zero. I don't include nonearnings
3 trades.

4 Q. So you excluded approximately 30 percent of his trading
5 from your analysis? Is that accurate?

6 A. I mean, I don't exclude it. I show it in that first
7 exhibit.

8 Q. And this is the first exhibit you're talking about?

9 A. Yes.

11:52 10 Q. Exhibit B?

11 A. Yes.

12 Q. And these are all of the transactions that you didn't
13 incorporate into your Fisher Exact Test or the other test that
14 you've done?

15 A. That's correct.

16 Q. It says if they never happened according to your analysis,
17 correct?

18 A. Well, sorry, sorry that's wrong. I include the 50. I
19 don't include the 119 and the 735.

11:53 20 Q. So out of the 2,892 transactions, you excluded almost
21 1,000 of them during the relevant time period from your
22 analysis, from your statistics; is that correct?

23 A. No it's because we're talking about earnings trades so
24 trades about earnings. These are not trades about nonearnings.
25 The whole point of this is to talk about earnings trades so I

1 don't do an analysis on earnings for nonearnings trades.

2 Q. But isn't it more accurate to use as much data as you can
3 to try to get the most accurate static you can by incorporating
4 data that's in front of you, including his trading this
5 nonfighting stocks in /SR-RS?

6 A. So first I don't know why you didn't circle the 50 because
7 I did include the 50 () and the -- the other ones I couldn't
8 incorporate it, right, because I'm saying that they traded --
9 they didn't trade in earnings, so I couldn't find the /S*EGS
10 number related to that trading because it didn't have an
11 earnings related to. How could I incorporate it how do you
12 want me to incorporate it.

13 Q. To the contingency table, for example, in the Fisher Exact
14 Test correct you can add as many variables as you want?

15 A. I can add as many variables as I want is this okay.

16 Q. So you can add, for example, every instance where you
17 conducted a trade that wasn't this a filing agent related
18 stock?

19 A. Could I have done that? Uhm, I suppose -- I suppose I
20 could have.

21 Q. And you could have also added to your contingencies table
22 every instance where he didn't trade in a -- the way he traded
23 this a nonearnings report?

24 A. So, yeah, this is pretty hypothetical. I haven't thought
25 about it. I don't know how -- I actually I can't know the

1 answer off the top of my head. If you did the analysis, you
2 could do it. I'll give you the data. /(.

3 Q. What null hypothesis did you formulate in connection with
4 your first opinion and the fact that --

5 A. The null hypothesis is that the correlation between the
6 traders trading and the identification of the earnings as being
7 DFIN and Toppan was uncorrelated.

8 Q. Uncorrelated meaning that it was essentially by chance?

9 A. That's another way to put it.

11:55 10 Q. So you were looking at whether Mr. Klyushin trades
11 randomly in companies?

12 A. No.

13 Q. No. This is Exhibit F, correct?

14 A. Yes.

15 Q. So percent of earnings events that are DFIN and Toppan
16 related events, 44 percent, right?

17 A. That's right.

18 Q. And I'll represent to you that if you were to look at the
19 client list, it would be approximately 64 percent, but let's
11:56 20 stick with 44 percent.

21 A. How did you determine that?

22 Q. Seeing whether ever, in that time period, a company used
23 or employed a fighting (filing agent)?

24 A. So these are the percentage of trades or the percentage of
25 companies?

1 THE COURT: I must say you're having a private
2 conversation that I'm not following.

3 MR. NEMTSEV: I'm sorry, Judge. Let me try to clear
4 it up as much as I can.

5 Q. You used the /S*EGS number correct?

6 A. That's correct.

7 Q. To calculate 44 percent. Had you used the market share,
8 meaning whether the company is a client of the /TPAO*EUGT it
9 would have been approximately 64 percent (had you used)?

11:56 10 A. I don't know that.

11 Q. But let's say you have 44 percent of the market is related
12 to DFIN and Toppan, correct?

13 A. Yes.

14 Q. So you assume that if Mr. Klyushin was trading at random
15 /SR-RS, for example, that his trading would have resulted in
16 44 percent in DFIN and Toppan related companies, 56 percent of
17 his trading would be in other entities?

18 A. That's incorrect. Under the null hypothesis that the
19 trading is uncorrelated the probability of seeing a pattern
11:57 20 during of 96 percent or more extreme the probability of that
21 would be less than one in a /TR-L.

22 Q. So what's this figure the expected number of events both
23 device inn and Toppan Merrill events and traded by trader
24 /SR-RS?

25 A. That would be your expectation under the null hypothesis.

1 Q. And your expectation under the null hypothesis is that for
2 Mr. Klyushin's transactions, you would expect that he would
3 only trade 156 times in Filing Agent 1 and Filing Agent 2
4 stocks; is that correct?

5 A. It's saying that the mean of your expectation of the null
6 hypothesis is equal to 170.

7 Q. Not 170. 156 for Mr. Klyushin, correct?

8 A. I'm sorry, 156, yes.

9 Q. So is 15644 percent of 356?

11:58 10 A. Yes.

11 Q. Okay, so you expect that 44 percent of Mr. Klyushin's
12 trades should have been in DFIN and Toppan service stocks,
13 correct?

14 A. No. Repeat the question.

15 Q. The expected number of events both DFIN and Toppan Merrill
16 events trader by trading fighting and trading activities are
17 uncorrelated correct?

18 A. Yes.

19 Q. This number is 44 percent of 356?

11:58 20 A. That's right. So if you had a company, right, and you
21 wanted to know what filing agent did they trade this, what's
22 your best guess of what the answer to that is? I would look at
23 the overall market share of the earnings. So I'd say if all I
24 knew under the technological hypothetical assuming they're
25 unrelated is that they traded this it and I'm assuming that

1 there's no relationship, my best guess is 44 percent. So
2 that's what I'm doing.

3 Q. But that assumes that Mr. Klyushin would trade by chance,
4 right is this?

5 A. It assumes that the relationship is, like, all statistics
6 has a null hypothesis, and the null hypothesis is typically
7 that there's no relationship. The null hypothesis is a random
8 process.

9 Q. So the null hypothesis assumes randomness, correct?

11:59 10 A. All statistics is based in randomness, yes.

11 Q. But is picking stocks a random event?

12 A. No.

13 Q. Do you yourself trade in stocks?

14 A. I'm barred from doing so by the SEC.

15 Q. But you have family members, friends that trade in stocks?

16 A. I know people who trade in stocks. I have previously
17 traded in stocks in my life.

18 Q. And you didn't just randomly select the stock correct?

19 A. That's correct and I don't say that he randomly /SR-RS my
12:00 20 conclusion is that he isn't trading randomly.

21 Q. Your conclusion is, the only reason that he's selecting
22 these stocks is because they're related to fighting 1 and 2?

23 A. That's not correct. My conclusion is that the pattern and
24 the data shows that whatever thing he was picking, whatever
25 strategy he was using happens to have this data signature that

1 is 97 percent trading DFIN and Toppan. It could be for a lot
2 of reasons. I don't know the reason and I'm not opining on the
3 reason.

4 Q. But you didn't attempt to discern any other reasons,
5 correct?

6 A. I did look at what he traded in, and, you know, after you
7 guys submitted, I did look at market share and I looked at the
8 sector.

9 Q. Is my calculation correct that about 75 percent of the
10 market of the S&P 500 related stocks serviced by /TPAOEUGTS 1
11 and 2?

12 A. I don't think that's correct, but I haven't done the math,
13 or -- so one thing I had to look -- well, no.

14 Q. Go ahead. What did you look for?

15 A. So in the data I submitted to you guys, there's a market
16 cap. If you look at quartile if you look at the market cap by
17 court tile you can run and see if the 44 percent changes over
18 quartile and I think it's like 45 percent 46 percent
19 42 percent. But he trades this stocks that are from like 1.7
12:02 20 trillion to \$150 million. The trading strategy if you just
21 look at it doesn't appear to be, like -- market cap doesn't
22 appear to restrict the trades that he's willing to trade on, if
23 that makes sense.

24 Q. It's only market cap?

25 A. That's true it's only market.

1 Q. /SR-RS?

2 A. There is some trading strategy that he used I agree and
3 whatever /SR-RS strategy he used whether it be /SR-RS market
4 cap I would love to see some documentation as to what his
5 trading strategy was because then you could test it against the
6 data, but I don't know what the trading strategy was.

7 Q. But the only thing that you correlate it to is the use of
8 /TPAOEUGTS 1 and 2, correct?

9 A. In my first analysis, yes.

12:02 10 Q. And that was at the request of prosecutors?

11 A. No.

12 Q. Whose request was that to use /TPAOEUGTS 1 and 2?

13 A. The fighting 1 and 2, yes, they asked me the question, is
14 their trading correlated.

15 Q. Now you've got a p-value of less than point 0001, correct?

16 A. That's right.

17 Q. So what is a p-value is this?

18 A. A p-value is the probability of seeing a result as, you
19 know -- as observed or something more extreme. If you assume
12:03 20 that the two -- if you assume that they're unrelated.

21 Q. Would you agree that there's substantial literature
22 regarding p-values and the risk of using them as a percentage
23 of chance?

24 A. What? I don't understand the question. There's a lot of
25 written on p-values, yes.

1 Q. A lot written about p-values, but specifically there's
2 also a lot written / (about the risks of relying on p-values to
3 claim or support the results of no practical significance.

4 A. What do you have up on the screen?

5 MR. NEMTSEV: This is Exhibit 3, your Honor.

6 THE COURT: Your Exhibit 3. Have you seen this
7 before.

8 THE WITNESS: They sent it last night at midnight,
9 yes.

12:04 10 MR. NEMTSEV: I was busy working. Sorry.

11 THE COURT: Well, do you want to take some time. Have
12 you had a chance to read it is this.

13 THE WITNESS: I haven't read the whole thing. I've
14 read this section the highlighted sections.

15 MR. NEMTSEV: I highlighted sections your Honor that
16 he could review /THA*R relevant to the subject.

17 THE COURT: Hopefully you're going to finish this
18 morning at least with this witness.

19 MR. NEMTSEV: Understood, your Honor.

12:04 20 Q. So this section talks about using sample sizes over 10,000
21 observations, correct?

22 A. Yes.

23 Q. And obviously it says there's large advantages or many
24 advantages to large samples?

25 A. That's right.

1 Q. But the issue is p-values quickly go to zero?

2 A. I see that.

3 Q. And did your p-values quickly go to zero in this case?

4 A. Quickly go -- my p-values are very small. Do they
5 quickly -- quickly go to zero I don't think you understand what
6 they're saying.

7 Q. Your p-values are incredibly small. They provide a one in
8 a trillion chance?

9 A. That's right, yes.

12:05 10 Q. And this article says that that's not necessarily the best
11 way to support results, correct?

12 A. Results of no practical significance, yes. Do you know
13 what practical significance means?

14 Q. Can you tell us?

15 A. Yes. So practical significance is, is the answer
16 meaningful? So one way that you deal with this type of problem
17 is that you chart the data. So I would argue that 96 percent
18 being different than 44 percent is of practical significance.

19 Q. Have you also had a chance to look at the American
12:06 20 statistical association release statement on statistical
21 significance and p-values"?

22 A. This one I'm aware of. When it came out, it was a pretty
23 big deal.

24 Q. It came out in March of 2016?

25 A. That's right.

1 Q. And specifically the second principle?

2 A. Oh, boy.

3 THE COURT: It's blurred here.

4 MR. NEMTSEV: I'm trying, your Honor.

5 THE COURT: Is this paper generally accepted in the
6 field? Ism yes.

7 THE COURT: This would be somewhat like a learned
8 treatise, in particular --

9 THE WITNESS: This is a well-known thing. Yeah when
10 it came out we had discussions about it at work.

11 Q. The second principle p-values don't measure the
12 probability that the studied hypothesis is true or the
13 probability that the data were produced by random chance alone"
14 is this?

15 A. Yes.

16 Q. So it's difficult to use the p-value or the one this a
17 trillion p-value to estimate percentage chance, correct?

18 A. So I want to talk about this statement because I think
19 you're interpreting it wrong. I can't see it, though, because
12:07 20 it's kind of blurry. (Audio back).

21 THE WITNESS: So the way to interpret this statement
22 is p-values do not measure the probability that the studied
23 hypothesis is true because p-values measure the probability
24 whether or not the studied hypothesis is false. And that's
25 exactly what I'm doing.

1 THE COURT: So walk me through that again a little
2 bit.

3 THE WITNESS: Sure. So in statistics you have a
4 hypothesis, and the hypothesis is you have a null hypothesis.
5 The hypothesis is.

6 THE COURT: No correlation.

7 THE WITNESS: No correlation right? And so all you
8 could say is either you reject the hypothesis or you fail to
9 reject the hypothesis. And the reason we use those terms is
10:08 10 because you can't say I accept the hypothesis. That's what
11 /SR-RS is talking about is it true.

12 THE COURT: That there is a correlation?

13 THE WITNESS: Not that there is a correlation but that
14 it was random that it was traded randomly. You can only prove
15 that it wasn't random. You can't prove that it was random.
16 Does that make sense? You can prove that it wasn't random by
17 comparing something that is random against the observed data,
18 right? But you can't prove that it is random. You can only
19 prove that it wasn't random. That's the distinction. He's
12:09 20 going into kind of, you know, statistical nonsense here, but,
21 yes.

22 Q. Would you agree that /TPHAUPBs are important when you're
23 making /(claims of one in a trillion chance?

24 A. They are, and that's why I interpret them correctly
25 (nuances).

1 Q. Let me show you Exhibit 2?

2 THE COURT: By the way, in that article does it ever
3 state it the way you stated it?

4 THE WITNESS: There's a bigger article. It states
5 that in one it talks about it's like the null hypothesis. If
6 you look at one, that's talking about the fact of what a
7 p-value is. The p-value tells you the chance of seeing the
8 observed given the null hypothesis. Can you show me the No. 1
9 again. P-values can indicate how incompatible the data are
10 with a specific statistical model," and that means how often
11 what's the probability -- p-values can tell you what the
12 probability is seeing the observed how incompatible seeing the
13 observed is with a specific model which is, you know, the null.

14 Q. And then it goes on to say as well "scientific conclusions
15 and business or policy decisions should not be based only on
16 whether a p-value passes a specific threshold"?

17 A. Right I view statistics as part of a mosaic of information
18 that should be considered. Yes, a static is one piece of
19 information that is useful, but it doesn't -- like correlation
12:11 20 and causation aren't the same thing, so it's -- the claims that
21 I'm making is that the data show there is a correlation.

22 That's the claim. I'm not explaining what that correlation is,
23 and I think 3 is talking about you shouldn't make the decision
24 on the static alone. You / (should see all of the evidence.

25 THE COURT: That's what you would tell the jury?

1 THE WITNESS: That's right.

2 Q. But the only thing you're correspond relating is use of
3 /TPAOEUGTS 1 and 2, correct is this?

4 A. Right. I am describing the data. The data shows that
5 there is a correlation, and the probability of seeing that
6 correlation under the null hypothesis that there's no
7 correlation is less than one in a trillion.

8 Q. But isn't this implicitly or explicitly implying that the
9 only reason for these transactions is the use of fighting 1 and
10 2?

12:12

11 A. No. I don't think so. Not in my opinion. (Filing agent)
12 /(.

13 Q. Is this the contingencies table that you created?

14 A. Yes, it is.

15 Q. And this /PHAOEFPS 38,000 trading events DFIN and Toppan
16 on this side traded not traded on this side, whether they were
17 used by DFIN and Toppan or whether DFIN and Toppan was
18 uninvolved, correct?

19 A. That's right.

12:12

20 Q. And you get a fisher exact p-value of zero; is that right?

21 A. It's a very, very small number but it goes beyond what the
22 output statement can produce. It's like, you know, one in a
23 trillion is like E minus something big.

24 Q. It's very simple these days to run a Fisher Exact Test; is
25 that correct?

1 A. Yes.

2 Q. There's plenty of online calculators that you can just
3 plug these exact figures in and get the statistic?

4 A. That's right.

5 Q. And this is one of those online calculators that are used
6 to create statistics, correct?

7 A. If you're telling me, I believe you.

8 Q. Okay, but it matches your results, the exact statistic
9 value is less than 0./# 00 /SR-RS 05?

12:13 10 A. That's right.

11 Q. And you can play around with statistics, I'm sure.

12 A. Is this you playing around with statistics?

13 Q. Exactly.

14 A. Okay.

15 Q. Let's assume the reverse, that Mr. Klyushin only traded in
16 four events relating to fighting 1 and 2, didn't trade in 40
17 events or traded this 40 events that are unrelated to fighting
18 1 and 2, you would still get the same statistical value,
19 correct?

12:14 20 A. Yes, so to interpret this table, what you'd be saying is,
21 the market share of DFIN and Toppan is 44 percent. They traded
22 only in 10 percent. Is 10 percent different than 44 percent?
23 And the answer yes, yes they're different, 44 */*.

24 Q. So meaning the only time in essence the Fisher Exact Test
25 would show most statistical significance is when Mr. Klyushin

1 only 44 percent of the time or 56 of the time traded in
2 /TRAOEUGT 1 and fighting 2?

3 A. No, it depends on the number of trades that he traded. So
4 imagine a coin, right? So you flip a coin three times. It's
5 heads all three times. How confident are you in that coin of
6 what the mean of that coin is, right? Is it a fair coin? I
7 don't know. Heads is pretty, you know, it comes half the time.
8 Because you have a small sample, you don't know. If you flip
9 that coin 360 times, you're very sure that the mean is correct
12:15 10 because you flipped the coin 350 times.

11 Q. But you would agree that picking stocks, trading in
12 stocks, making a decision to buy or sell, that's not flipping a
13 coin, correct?

14 A. Sure. The coin example is under the null hypothesis. So
15 you're saying if you see an observed value of 343 over 356, you
16 know, if you flip a coin 356 times how many times would you get
17 343? You're pretty confident because you flipped the coin
18 356 -- 356 is actually a pretty big number, and so you can
19 derive a lot of confidence, the confidence interval is fairly
12:15 20 tight. I think that's what you're getting at.

21 Q. I'm getting at the fact that it's difficult to equate the
22 stock market and choices of stocks and the decision to buy or
23 sell to chance?

24 A. I agree because people don't trade randomly. I agree with
25 that.

1 Q. They make selections maybe they like a stock maybe all of
2 my transactions are, for example, in Tesla stock, correct?

3 A. It's possible for a many trader to have a trading
4 strategy, yes.

5 Q. And in that event if I only traded Tesla stocks then all
6 of my stocks would be in fighting 1 or 2-related stocks?

7 A. Yes if I knew what stock you traded in, I would be very
8 confident that it was filed by DFIN and Toppan.

9 Q. It's very unlikely that --

12:16 10 A. But that wouldn't mean anything because they only trade
11 this Tesla, right? It's as part of all the information,
12 because they traded in so many different stocks, and you looked
13 at the stocks, they traded in like, I don't know, at least -- I
14 don't know the number of stocks that each individual traded in,
15 but a wide variety. It's the fact that he's trading in a wide
16 variety of stocks and they happen to all be DFIN and Toppan.
17 You're right if it was concentrated this one it wouldn't tell
18 you something. You could have an easy explanation. You're
19 saying there's a trading strategy. The /SRAGT trading strategy
12:17 20 would be we picked Tesla /SR-RS the same results that you see
21 in the data. Does that make sense?

22 Q. Not to me, but I'll leave it to Judge Saris. Okay, assume
23 you trade exclusively in S&P 500 stocks, assume that 75 percent
24 of them are serviced by device or Toppan, you make those
25 transactions with he have */* but DFIN and Toppan only serviced

1 44 percent of the stocks overall.

2 A. Right, if, you know -- I didn't do this analysis so I
3 don't want to -- you know, I don't believe that 70 percent of
4 S&P 500s are DFIN and Toppan, but if I, you know --

5 Q. Assume it is.

6 A. Yeah, so then you could find a trading strategy. You
7 would say my /-D trading strategy is I only trade in S&P 500
8 stocks, and that would be your explanation, I agree.

9 Q. But you're looking for a trading strategy, but you would
10 also, if you do the correlation /STA* that you did in this case
11 you would find it would be a one in a trillion chance that it's
12 uncorrelated to the choice of a filing agent?

13 A. Say that again? I think you're making --

14 THE COURT: In other words, there could be another
15 explanation?

16 THE WITNESS: Yes, I agree that there could be another
17 explanation.

18 Q. But the only explanation you considered is fighting 1 or
19 fighting 2?

12:18 20 A. And after you guys submitted your report I considered
21 market cap and sector.

22 Q. Even though there's significantly many more variables to
23 consider in connection with stock purchases?

24 A. Yes. There exist trading strategies that would get you to
25 the same result, but I don't know what his trading strategy

1 was. What I'm describing is that whatever trading strategy he
2 used looked like this, right? So if I knew what his trading
3 strategy was, I could then do a better static. I don't know
4 what his trading strategy was (static) /(.

5 Q. This is Exhibit G, your second opinion, correct?

6 A. That's correct.

7 Q. Once again, where did you get the data to come up with
8 this?

9 A. That same dataset that I gave to you.

12:19 10 Q. You made certain exclusions /SR-RS correct?

11 A. Yes.

12 Q. What did you exclude?

13 A. What did I exclude? I made the choice to look at only
14 earnings meets and earnings misses. I chose to try to
15 exclude -- sorry. I /SR-RS I tried to exclude earnings meets.

16 Q. Why is earnings meets not relevant in this analysis?

17 A. Because your expectation for an earnings meet has less,
18 like -- if I knew that they met earnings, I would not expect
19 one way or another for the stock price to go on earnings alone.

12:20 20 There are things other than earnings which determine a stock
21 price.

22 Q. Correct. But you only looked at earnings?

23 A. In this I looked at earnings, yes.

24 Q. And the only variable you considered is, from what I
25 recall, EPS?

1 A. Yes.

2 Q. What other variables are there in connection with
3 earnings?

4 A. There's a lot. Would you like me to list them.

5 Q. A couple, if you remember them.

6 A. There's earnings guidance, revenue. But these aren't
7 reported for every cop, */* company, so not every company
8 issues guidance but every company issues earnings.

9 Q. And not every company has /SR-RS?

12:21 10 A. That's true.

11 Q. So /SR-RS your dataset isn't complete?

12 A. I think for all but one of his -- once he traded, all but
13 one I think I had earnings for?

14 THE COURT: Had earnings --

15 THE WITNESS: Earnings sometimes and earnings actuals
16 for. He's saying that I don't have earnings for everything,
17 but I do have earnings for everything in this universe.

18 Q. Almost everything?

19 A. Except for I think -- you could look at it. I don't know.
12:21 20 I don't know exactly. I'm pretty sure it's one. It could be
21 three. It wouldn't change my results.

22 Q. And what is the null hypothesis that you created for this
23 test?

24 A. That trading long or short was unrelated to the earnings
25 surprise, whether they meet it by a lot or whether they miss by

1 a lot.

2 Q. So you expect to see essentially a 50/50 distribution by
3 buying and selling?

4 A. I expected to see about 6040 because companies tend to
5 beat earnings as opposed to miss earnings.

6 Q. So 6040 and you saw here 86 and 14?

7 A. Yes, 86 plus -- yes, yes.

8 Q. And again you would agree that there's industry industries
9 teams analysts working on predicting earnings better than other
10 analysts or what the market expects?

11 A. I agree.

12 Q. Would you agree that a good analyst would be able to
13 correctly predict 86 percent of the time whether there's an
14 earnings surprise or an earnings miss?

15 A. I don't know the answer to that, but, yeah.

16 Q. What was the third statistic that you looked at?

17 A. It's called a permutation test.

18 Q. Permutation test and this was looking at device inn log
19 data, correct?

12:23 20 A. That's right.

21 Q. And this is what you came up with the scatter plot
22 essentially?

23 A. Yes.

24 Q. And this scatter plot /SR-RS are number of hours?

25 A. Prior to earnings, yes.

1 Q. Is it fair to say based on this plot that most the vast
2 majority of transactions of these traders initiated happened
3 probably the day before?

4 A. I'd say most.

5 Q. Most. But Mr. Klyushin potentially */* for Mr. Klyushin,
6 potentially even more?

7 A. Yes.

8 Q. And that's consistent with your understanding of earnings
9 /TRAEUGDZ?

12:23 10 A. Yes.

11 Q. You would essentially by the day before see -- wait until
12 the earnings came out and then make a decision to sell the
13 stock?

14 A. Yeah. You want to limit your exposure to
15 nonearnings-related stock pricing events.

16 Q. And in connection with the intrusions the vast majority of
17 them took place at least 30 to 90 hours before that?

18 A. It looks to me about a quarter happened in each -- I could
19 calculate it. I don't know. The vast majority is certainly
12:24 20 wrong, but 75 percent?

21 Q. 75 percent is this?

22 A. Sure.

23 Q. A good majority?

24 A. Yes.

25 Q. So isn't this inconsistent with the notion that -- strike

1 that. The fact that almost all of the intrusions took place
2 more than 30 hours before an earnings announcement, that the
3 trading was consistent Mr. Klyushin with other traders who
4 trade earnings by trading the day before, aren't you just
5 walking in or expecting the conclusion that obviously the
6 earnings transactions or the transactions the /SR-RS sells were
7 after the intrusion?

8 A. So I think that would be the case if all of the dots were
9 within the ten hours. I don't know if you can -- but if all
10 the dots were in your top circle, I think that's true. But
11 let's look at the bottom left, right is this so here are cases,
12 you know, I counted off one, two, three, four, five, six,
13 seven, seven cases where a download occurs three days early,
14 yet they never or they only traded one time after -- sorry --
15 before the download. So your expectation would be that
16 25 percent should be in that little cloud at the bottom left.
17 Yet it looks like, you know, it's 90 percent right if it's nine
18 dots out of ten. Does that make sense is this.

19 THE COURT: No. Could you walk me through this again.
12:26 20 All right the start of trading --

21 THE WITNESS: Sure they often don't trade early, but
22 when they trade early it's 90 percent after a download.

23 THE COURT: And by a download you mean the hack is
24 this.

25 THE WITNESS: The hack. It's a download from the

1 server, yes.

2 THE COURT: A hack?

3 THE WITNESS: Yeah they like, you know, I think this
4 chart shows that.

5 The only time they start trading early is after there
6 is a hack that's early.

7 THE COURT: And which blue dots show that?

8 THE WITNESS: The bottom left near the minus 80, minus
9 80.

12:27 10 THE COURT: So there are only a few of those?

11 THE WITNESS: That's true, yes. But it's really the
12 whole diagonal, you know?

13 Q. But the vast majority of trading, even though they had --

14 A. Right the question is that clearly a pattern emerges,
15 right is this when I caught this the expectation there should
16 be no pattern that emerges. We're talking about someone
17 downloading for whatever reason on the server and when people
18 start to trade, right, your expectation there should be no
19 pattern should emerge. But when I plot it, I see a pattern
12:27 20 that occurs. And then I say yeah you're right there's only 9
21 dots. Let's use statistics. Statistics can tell us how often
22 this would occur by chance alone, right? And I find that in
23 this case this type of pattern where all of them /SR-RS that
24 little triangle, it only occurs one in a million times.

25 Q. But then again the fact that almost all of the trading

1 took place the day before which is consistent with how other
2 traders trade earning reports, you're essentially /SR-RS?

3 A. I don't /SR-RS I include it in my statistic but you're
4 right those trades have less statistical power right but the
5 trades that have more statistical power I run the stat to be
6 able to control for the issue that you're talking about.

7 Q. So more statistical power meaning one this a million is
8 not as statistically significant?

9 A. No. Meaning that the pattern -- you're right the pattern
10 can't emerge if they treated that 359, 359 they would always
11 trade after. There would be some -- like that just would be
12 the case, and the statistic would show that there's no
13 correlation. But because they don't trade like that, they
14 sometimes trade early, I can then run a statistic that shows --
15 I can see this pattern emerging and I can see how likely that
16 pattern Stow merge.

17 Q. But the pattern here is likely. It doesn't matter, for
18 example, when it was accessed if it was accessed 90 hours
19 before they still trade only 10 hours before, correct?

12:29 20 A. Sometimes but not all the time.

21 Q. A lot of the time, though, right? At least half of the
22 trading was --

23 A. What's striking is that there are like a little lots a lot
24 of dots. There's a lot of excite space, right? So when they
25 trade early, there's downloads that are early.

1 Q. But there's also when they trade early downloads that are
2 very, very --

3 A. Far away, that's true.

4 Q. 60 hours, 40 hours, 90 hours, 80 hours. A significant
5 portion of the downloads meaning it's not like an intrusion
6 occurred, a trade was placed. This could be an intrusion
7 occurred, and a trade was placed many days later?

8 A. That's right.

9 Q. Okay, but you're saying that there's only one in a million
10 chance that Mr. Klyushin at random would place these trades?
11 In connection with the download --

12 A. That this pattern would emerge if they were uncorrelated
13 only less than one in a million times. But do you see a
14 pattern? I see a pattern.

15 Q. Yes, I see a pattern that the vast majority of the trades
16 occurred less than ten hours before the earnings event?

17 A. Right but do you see the other dots the low dot line.

18 Q. And almost all of the download occurred more than
19 24 hours, 30 hours.

12:31 20 A. Sorry, owe did you want me to respond to that.

21 Q. That's the pattern I see. Do you see any other pattern?

22 A. I see the pattern that when the downloads occur early --
23 they sometimes trade early but they only trade early when the
24 download occurs early. That's what I see.

25 Q. You also made certain exclusions of data, correct, when

1 you calculated the statistic?

2 A. What do you mean by that?

3 Q. You excluded any trading this 2017, for example?

4 A. I wasn't asked to look at that time period.

5 Q. So isn't it relevant that there were transactions in these
6 same exact stocks prior to any download?

7 A. Relevant to what?

8 Q. Relevant to whether they traded -- their trades are
9 correlated to a download.

12:31 10 A. I think I answered this before, which is that it would be
11 a different analysis, right? So I would say is the trading
12 over that time period related to DFIN and Toppan.

13 Q. But you also said more data is good.

14 A. Uhm, more data is good, yes. But that's not the question
15 that I was asked to look at. Actually I didn't even have data
16 before -- I don't think I had much of this data. So I had data
17 starting in October of 2017, so anything before that I didn't
18 have.

19 Q. You didn't pull all of the transactions for these traders
12:32 20 prior to 2018?

21 A. There was only one account that I had that was in Sladkov,
22 and the trading data that I had began in October of 2017.

23 THE COURT: Let me ask you, how much longer do you
24 have?

25 MR. NEMTSEV: Five minutes, your Honor?

1 THE COURT: I just want to make sure. Will you have
2 any --

3 MR. FRANK: Redirect? Super brief, your Honor.

4 THE COURT: Redirect? All right. I just want to make
5 sure we finish this morning.

6 Q. And you also excluded any trading after December 2020 you
7 excluded trading in December 2021 even though there's no
8 evidence of downloads during those time periods, correct?

9 A. I don't know of the evidence of the downloads.

12:33 10 Q. It wasn't on the list of device inn downloads that you
11 reviewed, correct?

12 A. I don't -- I don't think -- yeah, I don't remember the
13 time period for the device inn downloads standing here today.
14 I can look at it.

15 MR. NEMTSEV: I have nothing further, your Honor.

16 REDIRECT EXAMINATION BY MR. FRANK:

17 Q. If I could just pick up where Mr. Nemtsev left off, he
18 asked you some questions about these trades in 2017. Do you
19 recall that?

12:33 20 A. Yes.

21 Q. And he asked you whether you looked at their trading,
22 plural, in 2017. Do you recall that?

23 A. Yes.

24 Q. Are you aware of whether Mr. Klyushin had a trading
25 account in 2017?

1 A. To my knowledge, his trading account began in 2018.

2 Q. And of the trading accounts that you looked at, you looked
3 at eight traders?

4 A. That's right.

5 Q. How many traders even had a trading account in 2017?

6 A. Just one.

7 Q. Who was that?

8 A. Sladkov.

9 Q. So these are Mr. Sladkov's trades?

12:34 10 A. That's correct.

11 Q. Are you aware that Mr. Klyushin claims he doesn't know
12 Mr. Sladkov and has no relationship with him?

13 A. I was not aware of that.

14 Q. Would it make sense to analyze the trading of eight
15 traders when only one of them is trading?

16 A. Can you repeat the question?

17 Q. Would it make sense to analyze the trading of eight
18 traders when only one of them is trading?

19 A. Uhm, it would answer a different question, like --

12:35 20 Q. Could we look at Exhibit K, please. And I think for this
21 we need to switch back to -- Here, we'll do it on paper.

22 Mr. Nemtsev asked you some questions about this chart. Do you
23 recall those questions?

24 A. Yes.

25 Q. So as we move down the vertical axis, that is trading that

1 gets further and further away from the earnings announcement,
2 correct?

3 A. That's right.

4 Q. And if we move left across the horizontal axis, that is a
5 download that occurs further and further away from the earnings
6 announcements, correct?

7 A. Correct.

8 Q. So there are in fact trades that occur 70, 80, 60, 50,
9 40 hours before an earnings announcement, correct?

12:36 10 A. That's right.

11 Q. In each and every one of those instances, when was the
12 download?

13 A. Before the trade.

14 Q. Why is this part white?

15 A. Because it never happened that they traded before the
16 download.

17 Q. He asked you questions about the fact that a lot of the
18 trades are concentrated near the time of the earnings
19 announcements, sort of up here at the top of the chart?

12:36 20 A. Uh-huh.

21 Q. In each and every one of these instances, there was also a
22 download before the trade, correct?

23 A. That's correct.

24 Q. If a download had happened after a trade, where would that
25 be on the chart?

1 A. The trading after? It would be in the red triangle.

2 Q. So if he traded near an earnings announcement but the
3 download was also near an earnings announcement, but the
4 download was afterwards, it would be in this area, correct?

5 A. That's right.

6 Q. But there's nothing in this area?

7 A. That's right.

8 Q. So what is the correlation that you observed based on the
9 data?

12:37 10 A. For Klyushin, I observed that the probability of seeing
11 this pattern emerge, if the two things were uncorrelated, is 17
12 in a million.

13 Q. Okay. So the null hypothesis is that if there's no
14 correlation between a download and a trade, this pattern would
15 occur 17 times out of a million?

16 A. Yes.

17 Q. And you're not explaining why the pattern emerges? You're
18 just testifying that there is a correlation, correct?

19 A. That's right.

12:38 20 Q. Could we look at Exhibit G, please. What is the
21 correlation that you observed here?

22 A. That they tended to -- it was between them trading long
23 and short and the earnings surprise being positive or negative.

24 Q. Okay. And by definition, an earnings surprise is
25 unexpected by the market, correct?

1 A. That's why it's called a surprise.

2 Q. Okay. 86 percent of the time when the surprise was
3 positive, Mr. Klyushin bought stock, correct?

4 A. When it turned out to be positive, yes.

5 Q. And 85 percent of the time when the surprise was negative,
6 Mr. Klyushin went short, correct?

7 A. That is correct.

8 Q. Could that be the result of remarkable skill?

9 A. Yes.

12:38 10 Q. Could that be something else?

11 A. Yes.

12 Q. Are you opining what the reason for that is?

13 A. No.

14 Q. You were asked some questions about Defense Exhibit 4 and
15 this statement that "P-values do not measure the probability
16 that the studied hypothesis is true or the probability that the
17 data were produced by random chance alone."

18 A. That's right.

19 Q. In any of the analysis that you did, are you opining that
12:39 20 the null hypothesis is true?

21 A. No.

22 Q. What are you opining?

23 A. I'm opining that the null hypothesis is false.

24 Q. That the null hypothesis is false. So the hypothesis in
25 every one of those instances that we've looked at is that

1 there's no relationship between X and Y, correct?

2 A. Yes.

3 Q. And you're opining that that hypothesis that there is no
4 relationship is false, correct?

5 A. Yes.

6 Q. Because there is a statistically significant relationship
7 between those two things?

8 A. Yes.

9 Q. Are you suggesting that Mr. Klyushin traded by chance?

12:40 10 A. No.

11 Q. What are you suggesting about the relationship between
12 Mr. Klyushin's trades and who the filing agent is?

13 A. I find that he trades in DFIN and Toppan Merrill earnings
14 events a lot, and you wouldn't see that, given the market, the
15 market share.

16 Q. So the null hypothesis that there is no relationship
17 between his trading choices and the filing agent is false?

18 A. Right. You'd have information. The correlation doesn't
19 equal causation.

12:41 20 Q. So there is a statistically significant relationship
21 between how he trades and who the filing agent is?

22 A. Yes.

23 Q. Are you offering an opinion on what the trading strategy
24 is that results in that correlation?

25 A. No.

1 Q. Are you opining on what the cause of that correlation is?

2 A. No.

3 Q. You're simply testifying that there is a correlation?

4 A. That's right.

5 Q. And what is the correlation, according to the Fisher Exact
6 Test?

7 A. That you would see those occurring by chance less than one
8 in a trillion times, for the first two tests, and the rest --
9 yeah.

12:42 10 Q. And the Fisher Exact Test calculates all the different
11 possible combinations, correct?

12 A. Yes. That's why the number gets so big or so small.

13 Q. Why is it called an "exact test"?

14 A. Because it's calculating an exact probability.

15 Q. Are you making distributional assumptions in coming up
16 with that number?

17 A. No.

18 Q. It's simply counting all the different combinations and
19 coming up with the result?

12:42 20 A. That's right. A computer does it.

21 MR. FRANK: No further questions.

22 THE COURT: One quick question. When you said before
23 that someone checks your work, is that somebody who has a
24 doctorate or a master's in statistics?

25 THE WITNESS: Sure. So there are two layers of

1 checks. There are conceptual checks and then there's data
2 checks. I had someone who doesn't have a degree check my data
3 work, and then I had someone with a degree check my conceptual
4 work.

5 THE COURT: And those are employees at the SEC?

6 THE WITNESS: That's right.

7 THE COURT: And do you know what the degree is?

8 THE WITNESS: Ph.D. in finance.

9 THE COURT: What is it?

12:43 10 THE WITNESS: Ph.D. in finance.

11 BY MR. FRANK:

12 Q. But leaving aside degrees you obtained in 2011, sir, how
13 many years have you been working with statistics in your
14 day-to-day work?

15 A. Since I've graduated, I've worked with -- this is my job.
16 I do it all the time.

17 Q. Twelve years?

18 A. Twelve years, yes. I have significant practical
19 experience in matters of import to the Commission, yes.

12:43 20 THE COURT: Thank you.

21 BY MR. FRANK:

22 Q. And the defense expert, Mr. Cullen, he was in college in
23 2012 to 2016. Are you aware of that?

24 A. I was not aware of that.

25 Q. Where were you in 2012 to 2016?

1 A. I was working at Cornerstone and the SEC.

2 Q. Doing statistical analysis?

3 A. Yes.

4 Q. And in 2016 and 2019, he was studying for his master's
5 degree. Are you aware of that?

6 MR. FERNICH: Objection, foundation. He already said
7 he wasn't aware of it.

8 Q. Where were you between 2016 and 2019?

9 A. I was working at the SEC.

12:44 10 Q. Doing what?

11 A. Summarizing data and drawing conclusions from that data
12 using statistics.

13 MR. FRANK: Thank you. No further questions.

14 THE COURT: Thank you. Anything else?

15 MR. NEMTSEV: No, your Honor.

16 THE COURT: Thank you. You may step down. Thank you.

17 THE WITNESS: Thank you.

18 (Witness excused.)

19 THE COURT: So what do we do now?

12:44 20 MR. Fernich: How about the bathroom?

21 THE COURT: I want to know -- it will come in due
22 course, but I just want to know whether you want to put your
23 witness on. I mean, not today obviously. He's sick.

24 MR. NEMTSEV: Can I confer with my colleague for just
25 one second?

1 THE COURT: Yes.

2 (Discussion off the record between defense counsel.)

3 MR. FERNICH: Judge, if you're prepared to hear
4 argument today -- you indicated last time that you'd probably
5 be ruling from the bench -- maybe we should just proceed with
6 the argument and see how it goes. I'm not reserving --

7 THE COURT: Let me ask you this: Does the government
8 rest?

9 MR. FRANK: Yes, your Honor.

12:45 10 THE COURT: Now it's your turn. I'm not going to do
11 the argument, and if you don't win, then you get to put on a
12 witness.

13 MR. FERNICH: No, no, your Honor. That's not what
14 we're suggesting.

15 MR. NEMTSEV: I would just ask your Honor to admit
16 Exhibits 1 through 5 and Exhibit 7 that we used.

17 THE COURT: Yes, okay.

18 (Defense Exhibits 1-5 and 7 received in evidence.)

19 THE COURT: Why don't we do this. It's quarter to
12:45 20 1:00. We spent the morning on this. There's at least been a
21 humanitarian request for a break. I don't know that we would
22 finish argument by 1:00 o'clock, so I need a game plan from you
23 all. Why don't we do this: Why don't we take a five-minute
24 break right now. We'll come back in, and you'll tell me what
25 you want to do. We also have to do a pretrial at some point;

1 for example, voir dire questions for the jury, and there may be
2 other pieces of questions on motions in limine I haven't
3 addressed. I'm not sure. But I want to know now because I
4 don't want to -- I'm gone next Thursday and Friday, so I need
5 to schedule something if you're going to want to have another
6 witness.

7 MR. FERNICH: We're also sensitive to the Court not
8 being so well today, and maybe you don't want to hear argument
9 today, so, you know --

12:46 10 THE COURT: I'm here.

11 MR. FERNICH: Okay.

12 MR. FRANK: I'll just say for the government, we don't
13 anticipate a long argument, Judge. We presented the evidence;
14 we'll make a very brief argument.

15 THE COURT: Why don't you do this: Why don't you
16 confer with your client, take a bathroom break, and I'll see
17 you in five minutes, all right?

18 MR. FRANK: Yes, your Honor.

19 (A recess was taken, 12:46 p.m.)

12:49 20 (Resumed, 12:57 p.m.)

21 THE CLERK: So as the proponent of the testimony, the
22 government would go first.

23 MR. FRANK: Thank you, your Honor. So your Honor
24 identified a couple of series of issues that you were focused
25 on for today. One was the qualifications of the witness. The

1 relevance of the testimony was the second. The reliability of
2 the testimony was the third, and avoiding the prosecutor's
3 fallacy was the fourth. So let me just address those briefly.

4 With respect to the witness's qualifications, he has
5 studied statistics. He graduated with a degree in economics
6 and mathematics that required the study of statistics more than
7 a dozen years ago. He is a chartered financial analyst, which
8 is an exam that requires three layers of testing that examines
9 his qualifications in statistics. But I would say most

12:58 10 importantly, your Honor, he has spent the last dozen years
11 working at blue-chip institutions where his work has been
12 focused on conducting statistical analysis in the real world.
13 Cornerstone Research, where he spent the first three years
14 after his graduation, is the blue-chip consulting firm used in
15 litigation; and his work there for banks and financial
16 institutions and pension funds was focused on the use of the
17 appropriate statistical analysis for the various cases that he
18 was working on. And since that time, he has been promoted
19 through the SEC. He has won awards within the SEC for his use
12:59 20 of some of the very statistical methods and analysis that he is
21 applying in this case. His work has been checked and rechecked
22 by others at the SEC, and there's really no meaningful dispute
23 that he is not qualified to offer the opinions he's offering
24 here because of the fact that he has done this for a dozen
25 years. It's not dissimilar in the slightest from a witness

1 from the FBI ballistics lab testifying about the type of work
2 that they do there on a day-to-day basis to analyze ballistics
3 for fingerprints on a weapon. This is what he does, and it is
4 what he has done, and it is what he's trained to do.

5 With respect to the relevance of the testimony, your
6 Honor, the testimony is extremely relevant and probative of
7 what's at issue in this case. First of all, he looked at the
8 relevant time period, which is to say the time period of the
9 charged conspiracy, and examined the correlation between the
01:00 10 defendant's trading and the nature of that trading and what is
11 at issue in this case:

12 Is there a correlation between the trading and who the
13 filing agent is? The answer is, there is a correlation.

14 Is there a correlation between the trading around
15 earnings and the degree of earnings surprises, which is the
16 nature of the trading that is at issue in this case? There is
17 a correlation.

18 Is there a correlation between the defendant's trading
19 and things that were downloaded from Filing Agent 2? There is
01:00 20 a correlation. So it is highly relevant to the issues here.

21 And it is also relevant and probative for another
22 reason, your Honor. The defense has found examples, they will
23 continue to find examples, they will offer in evidence examples
24 of individual trades that went a certain way or didn't go a
25 certain way, and the government will also offer by way of

1 example evidence of individual trades. But there are thousands
2 of trades at issue in this case across eight different traders
3 and, you know, roughly two dozen trading accounts over a
4 roughly 31-month period, right? If we were to go through each
5 and every one of those trades, and each and every one of those
6 earnings announcements, and each and every one of the hacks
7 that took that information, and all of the other possible bases
8 for making that trade, we would literally be here for years,
9 months, analyzing each one of those things.

01:01 10 Similarly, if we were to only go by example, it would
11 be highly misleading to the jury because they're going to find
12 examples that are within the 15 percent where he traded
13 opposite the way you would expect based on the earnings, and
14 we're going to find examples within 86 percent of the time
15 where he traded consistent with the direction you would expect
16 based on the earnings announcement. So the examples, while
17 significant, only get you so far. What the statistical
18 analysis does is, it shows which are the outliers and which are
19 consistent with the bulk of the trading that went on here, and
01:02 20 is there a statistically significant correlation? That's why
21 it's probative, Judge.

22 And it's reliable, it's reliable because he's using
23 standard tests. He's using off-the-shelf software to conduct
24 that analysis. He's using the relevant dataset, which is the
25 trading by these traders during this time period across these

1 accounts, and it's been checked and it's been rechecked. And
2 there's really no meaningful -- I think after that
3 cross-examination, what the defense may establish is that they
4 can ask some questions about some of these things and they can
5 argue to the jury about the weight they should give this
6 evidence, but there's really no dispute that the statistical
7 significance of the relationships that he's established exist.
8 They exist. That correlation exists. It is statistically
9 significant. There's really been no contrary suggestion.

01:03 10 And that leads us to the last point, which is the
11 concern about the prosecutor's fallacy. I submit that this
12 witness was extremely careful, your Honor.

13 THE COURT: Yes, the one thing on that, I might agree
14 with that, and I understand it a whole lot better, but I don't
15 want you to mention that number in the opening statement.

16 MR. FRANK: That's fine, your Honor.

17 THE COURT: Because it needs to be very, very, if it
18 comes in, very nuanced where someone understands there's a
19 difference between correlate and cause, and that there are
01:04 20 other explanations, like, he likes a certain kind of stock.

21 MR. FRANK: That's exactly right.

22 THE COURT: It's got to be tailored to the Supreme
23 Court discussion of prosecutor's fallacy, but also cabined in a
24 way that the jury doesn't start off in an opening statement
25 without knowing anything, and all they can think about is one

1 in a trillion.

2 MR. FRANK: Understood, your Honor, and we will do
3 that, and we will be extremely careful in the way we present
4 his testimony. But the point is that he is extremely careful
5 in how he frames it. He was asked many, many times to offer an
6 opinion on causation. He is one piece of the puzzle. He is
7 not opining about causation. He's simply showing the
8 relationship, and we are then going to offer through other
9 evidence an explanation of the --

01:04 10 THE COURT: This is foreign turf for most jurors. I
11 don't know if you've run into this at all. Have you been in a
12 trial where the jury could ask questions if they don't
13 understand the numbers?

14 MR. FRANK: I have had that experience twice, your
15 Honor. It was not my favorite experience, but it has happened.

16 THE COURT: I'll ask you all what you think. All
17 right, thank you.

18 From the defense point of view, as I understand it, I
19 can't remember if we were on the record or off the record, but
01:05 20 you do not want to put on your expert right now?

21 MR. FERNICH: That is correct, Judge. We're prepared
22 to argue it and submit the issue today.

23 THE COURT: You're prepared to --

24 MR. FERNICH: To argue and submit the issue today.

25 THE COURT: Oh, all right. Thank you.

1 MR. FERNICH: And fundamentally, I'm honing in on what
2 your Honor just said. The argument is based upon the
3 prosecutor's fallacy, and we're moving to exclude what they're
4 calling the p-value, and what I've learned in other cases is
5 called the probability ratio, and it's very simple: We start
6 with the proposition that under Rule 702, expert testimony is
7 inadmissible if it merely tells the jury what result to reach.
8 That's from the commentary to Rule 702 and the First Circuit
9 case from 1995 called *U.S. v. Shea*.

01:06 10 THE COURT: I agree with that, but that's why I was
11 very careful that we're not going to do it in the openings, and
12 we're going to limit what he can say, just like you nicely did
13 on cross.

14 MR. FERNICH: That's right, and the cross was
15 instructive and the redirect was instructive, in my view, based
16 on two things he said. In response to a question from
17 Mr. Nemtsev, he said, quote -- and this was about results
18 having practical significance when Mr. Nemtsev showed him the
19 article -- and he said, quite rightly, "96 percent being
01:06 20 different from 44 percent is of practical significance."

21 I agree with that proposition. And when you look at
22 the chart in Exhibit G, there are six of eight categories
23 there, and everything is fine in terms of admissibility in
24 categories in Lines 1 through 6. When he goes the extra yard
25 and he gets close to the prosecutor's fallacy with the p-value,

1 or the probability ratio, they don't need that. It smacks the
2 jury right across the face that 96 percent is different from
3 44 percent. And that's of practical significance. It's not
4 beyond the canon of an average juror. But when you start in
5 and don't extrapolate out, piling multiplier upon multiplier
6 and you get to one in three trillion, that's not expert
7 testimony anymore. That's just telling the jury what result to
8 reach.

9 And similarly, in response to a question from
01:07 10 Mr. Frank on redirect, he said in plain English what his
11 analysis means, that Mr. Klyushin trades in DFIN a lot, and you
12 wouldn't expect to see that much based upon its market share.
13 That is fine. That's what he did in reviewing the data and the
14 analytics. He serves in essence as a summary witness in that
15 respect. But to then pyramid out to 1.3 trillion, that is
16 antithetical to the state of Rule 702. It's just telling them
17 what result to reach, and the problem is exacerbated --

18 THE COURT: The problem I run into is, just going
19 through the check list, he does have the qualifications.

01:08 20 MR. FERNICH: Sure.

21 THE COURT: It is relevant. The dataset is reliable,
22 and no one has invalidated or suggested that the Fisher Exact
23 Test is an unreliable test. No one has put in any evidence. I
24 was sort of thinking I would hear that, but I haven't heard
25 that. And so really what you're talking about is somewhat more

1 403 analysis, which is, you think everything should come in
2 other than one in a trillion.

3 MR. FERNICH: Well, I mean --

4 THE COURT: Not that you're conceding it, but that
5 there's enough under *Daubert* to put everything in other than
6 one in a trillion.

7 MR. FERNICH: Yes. Presumably there will be a battle
8 of the experts. We don't want to gut their right to present
9 the case as they see fit, but the jury when it's told of that
01:09 10 number, as we flagged, you know, much earlier in the hearings
11 before your Honor, they don't need that. When I see 96 versus
12 the 44 percent market share, it's exactly what Mr. Frank is
13 saying: Yes, it could be based upon, you know, hacked
14 information. It could be based upon a contrary trading
15 strategy. It could be any number of things. There's no reason
16 that a putative expert, and he will be qualified as an expert,
17 but an expert who works for the prosecuting authority in
18 litigation and analytics, should go the extra yard and say,
19 "Hey, it's one in three trillion that this could happen --"

01:09 20 THE COURT: One in a trillion? No?

21 MR. FERNICH: Well, there's two -- look, there's three
22 stats, Judge.

23 MR. FRANK: It's one in a trillion is what he would
24 say, and --

25 MR. FERNICH: One in a trillion. There's three stats:

1 the correlation between filing agent and trading activity.
2 Then there's the earnings stat. There's a correct up or down
3 position, which is I think the most problematic one because, as
4 your Honor's questions indicated, it gets you into bona fide
5 trading strategies, and he acknowledged that it could be the
6 result of bona fide trading strategies, so you get into a 401,
7 403, 702 balance there.

8 And then the third, the timing. Number two is the
9 most problematic, but I know what we can do and what we can't
01:10 10 do, and what we can plausibly argue for is to get rid of the
11 mind-boggling, eye-popping number, and let him put his
12 underlying analysis with the 96 percent versus the 44 percent
13 market share right before the jury. They're not idiots.
14 They're going to get this. But if you go the extra mile --

15 THE COURT: All right, so this is what I'm going to
16 do: I'm going to think about the one in a trillion number. It
17 sure isn't coming in in the opening. Other than that, I mean,
18 that would be a 403 analysis. From the point of view of
19 *Daubert*, it meets the requirements, so I am worried.

01:11 20 And let me look at the government and just say, I sort
21 of take the defense's point a little bit. You know, be careful
22 what you wish for.

23 MR. FRANK: I understand, your Honor, and if I may
24 briefly just address that. First of all, we don't need that
25 formulation. That's not the test.

1 THE COURT: No, it is not, but it is eye-popping.

2 MR. FRANK: But it would be eye-popping if we were
3 saying it's a one in a trillion chance he did it, he didn't do
4 it, or he did do it, whatever the formulation is. But that is
5 not the testimony in this case. The testimony is extremely
6 narrow. And what he is saying is, the probability that you
7 would observe this trading pattern, this relationship between
8 trading and the identity of the filing agent, that is something
9 you would not expect to see more than one in a trillion times.
01:12 10 But not that he did it for some nefarious reason. There may be
11 a legitimate --

12 THE COURT: If I let it in, we're just going to have
13 to be really careful about how it's said --

14 MR. FRANK: Agreed.

15 THE COURT: -- as well as cautionary instructions.
16 I'm struggling with it a little bit, but I understand it now.
17 That's a big plus because I didn't when this first came in the
18 front door, so I'm trying to treat it very gingerly.

19 MR. FRANK: And we think a limiting instruction to the
01:12 20 effect that, you know, this is one piece of evidence that is
21 directed at establishing a statistical relationship but not
22 causation --

23 THE COURT: Is he your first witness?

24 MR. FRANK: No. No, he's not our first witness, and
25 he's not even our second witness.

1 THE COURT: All right, let me think about that piece
2 of it. I don't think it will really affect --

3 MR. FERNICH: Let me just make one thing clear, okay?
4 I want to make clear that we object as a threshold matter under
5 Rule 702, that that branch of his testimony is not admissible
6 expert testimony because it simply tells the jury what result
7 to reach. I understand Mr. Frank's point. I understand what
8 he's purporting to say and what he's not purporting to say.
9 Irrespective of that, it does not meet the standard for
01:13 10 admissibility under 702 because that branch of the testimony is
11 simply telling them what result to reach, and they can deduce
12 all of that from everything else, the first six columns of
13 the chart.

14 THE COURT: All right, thank you. We're done. But
15 let me say, we do need another day to talk about voir dire,
16 jury voir dire, et cetera.

17 Do you have another date in there?

18 THE CLERK: No, we don't. We're just going right to
19 trial.

01:13 20 THE COURT: Well, we can't go right into trial because
21 it's 1:15. Let me just say that looking at the voir dire, I am
22 thinking now, turning to the government, that we need to knock
23 out the Russian Federation from the website because otherwise I
24 have to ask about it. You can just black it out, that he does
25 work for the Russian Federation. Either that or I have to ask

1 a question about it.

2 MR. FRANK: We have no objection to asking a question
3 about it, Judge, but we're not going to say the name.

4 THE COURT: As soon as I do --

5 MR. FRANK: He's Russian. I mean, there's going to be
6 no dispute. He's in Moscow. But the fact that he works with
7 and for the government is going to come in in other ways. He
8 says it. He says it in the chat --

9 THE COURT: It may be. I just don't want to get into
01:14 10 the war in Ukraine. I don't want to get into Mr. Putin. I
11 don't want to get into, I don't know --

12 MR. FRANK: We're not going near those things, Judge.

13 THE COURT: I don't know why you need the Russian
14 Federation, which makes it sound like the KGB. Why don't you
15 just put in that he works for the government?

16 MR. FRANK: That's exactly what we would say. I just
17 don't want to redact his website. I think that raises even
18 more questions.

19 THE COURT: Would you like the website redacted?

01:14 20 MR. NEMTSEV: I would also like the question asked
21 because the website features not only the Russian Federation.
22 It also features the fact that he's working for some office
23 within the Kremlin, from my recollection. It's extensive. It
24 talks about specific offices --

25 THE COURT: So you just would prefer the question?

1 MR. NEMTSEV: I think I would prefer the question --

2 THE COURT: Because you think it will come out anyway?

3 MR. NEMTSEV: I think it will. That's the issue. I
4 think at a certain point, there is some chat, whatever it may
5 be --

6 THE COURT: Okay, you know the evidence better than I
7 do, so --

8 MR. KOSTO: Your Honor, the one thing in terms of
9 timing that I think is important to think about is, we would
01:15 10 submit that the Court can handle these questions orally as part
11 of voir dire, and then adding a written questionnaire to the
12 jurors that will require them to sit down and fill out will
13 burn a day that we don't have.

14 THE COURT: Can I tell you, I'm really good at this.
15 I've been doing it for 30 years, 30 as in 3-0. I'm not going
16 to do a massive 30-page questionnaire. I'm going to ask one or
17 two questions. It's, like, an opportunity for some juror who
18 has a problem and is embarrassed to tell it to me in front of
19 the defendant to say something. So why don't you work on one
01:15 20 or two questions and --

21 MR. FRANK: Judge, we really object to that because
22 that singles out this issue, and --

23 THE COURT: It's a big issue. Right now in our
24 history and the history of Russia, it's a huge issue.

25 MR. FRANK: And it can easily be addressed in the

1 context of a question that wouldn't embarrass anybody.

2 THE COURT: I understand that, but we'll do it on that
3 issue if you want it. Do you want it? I'm not going into the
4 war in Ukraine. It's not happening.

5 MR. FERNICH: No, no.

6 THE COURT: I'm just going to ask whether somebody can
7 be fair and impartial with respect to someone who is a citizen
8 of Russia, and we'll leave it there. Thank you. I do it with
9 black people. I do it with child porn cases. I do it with
01:16 10 anything that's sensitive where someone might be embarrassed to
11 raise their hand, and it will take ten seconds. No, that's a
12 lie. Ten minutes.

13 MR. NEMTSEV: Would the question also include about
14 contracting?

15 THE COURT: You know, I'm having trouble with hearing
16 you.

17 MR. NEMTSEV: I'm sorry. Would the question also
18 include contracting with the Russian Federation?

19 THE COURT: I don't know.

01:17 20 MR. NEMTSEV: It implies closer ties than just being a
21 Russian national. That's the issue.

22 THE COURT: I don't know. I don't know. If you leave
23 it open like that, for all they know, it's providing military
24 equipment, you know, or that he's part of the 2016 issue. I
25 mean, I just --

1 MR. NEMTSEV: And that was one of the exhibits your
2 Honor excluded that implicated --

3 THE COURT: All right, thank you.

4 THE CLERK: No other date? We're good.

5 THE COURT: We're not going to have another date right
6 now unless I -- but if you need me, you've got to do it by next
7 Wednesday, okay? I'm out Thursday and Friday.

8 MR. NEMTSEV: So, your Honor, the only foreseeable
9 issue is the exhibits. There's going to be objections
01:17 10 obviously on both sides, I presume, so --

11 THE COURT: Yes. Maryellen has it very firm. I give
12 this totally over to her. We want the exhibits that are not
13 contested, and we want the exhibits that are contested. And
14 I'll meet you every morning at 8:30, and we'll go through the
15 contested exhibits, so if there's a big issue, we'll deal with
16 it at 8:30 in the morning.

17 MR. NEMTSEV: Thank you, your Honor.

18 MR. FRANK: Can we just briefly address the time on
19 opening statements?

01:18 20 THE COURT: One to three days?

21 (Laughter.)

22 MR. FRANK: Even I would get sick of hearing myself.

23 THE COURT: Well, what do you want?

24 MR. FRANK: I don't know exactly but probably around
25 45 minutes.

1 THE COURT: Fine. What do you want?

2 MR. NEMTSEV: Half an hour probably.

3 THE COURT: Yes, fine, totally in the norm. Okay,
4 thank you.

5 (Adjourned, 1:18 p.m.)
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C E R T I F I C A T E

UNITED STATES DISTRICT COURT)
DISTRICT OF MASSACHUSETTS) ss.
CITY OF BOSTON)

I, Lee A. Marzilli, Official Federal Court Reporter,
do hereby certify that the foregoing transcript, Pages 1
through 145 inclusive, was recorded by me stenographically at
the time and place aforesaid in Criminal No. 21-10104-PBS,
United States of America v. Vladislav Klyushin, and thereafter
by me reduced to typewriting and is a true and accurate record
of the proceedings.

Dated this 26th day of January, 2023.

/s/ Lee A. Marzilli

LEE A. MARZILLI, CRR
OFFICIAL COURT REPORTER